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REPORT RESUMES

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THE ADJUSTMENT OF INDIAN AND NON-INDIAN CHILDREN IN THE PUBLIC SCHOOLS OF NEW MEXICO, SECTIONS 1-2.

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NEW MEXICO UNIV., ALBUQUERQUE, COLL. OF EDUCATION

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THE PURPOSE OF THIS STUDY WAS TO FIND THE BEST MEANS FOR FACILITATING THE ADJUSTMENT OF INDIANS AND NON-INDIANS IN THE PUBLIC ELEMENTARY SCHOOLS. TAKING INTO CONSIDERATION DIFFERENCES IN CULTURE, VALUE SYSTEMS, LANGUAGE, MOTIVATIONS, AND BEHAVIOR. A BASIC STATEMENT OF DEFINITION AND EXPLANATION OF CULTURAL DIFFERENCES WAS PREPARED FOR TEACHER USE BASED ON AN INTERDISCIPLINARY APPROACH TO THE PROBLEM (EDUCATIONAL, SOCIOLOGICAL, ANTHROPOLOGICAL AND PSYCHOLOGICAL). PILOT SCHOOLS WHERE INTEGRATION IS OCCURRING WERE SELECTED AS THE EXPERIMENTAL GROUP FOR DESCRIPTIVE STUDY. THE TEACHERS IN THESE SCHOOLS WERE ASSISTED IN RELATING THE DEFINED CULTURAL DIFFERENCES TO THEIR CLASSROOM PROCEDURES. SCHOOL SITUATIONS WERE DESCRIBED IN TERMS OF TEACHER METHODOLOGY, TEACHER-PUPIL BEHAVIOR, PARENT PARTICIPATION, AND MEASURES ON THE SUBJECTS, INCLUDING SOCIOMETRIC STUDIES, STANDARD READING TESTS, AND MEASURES OF ORAL LANGUAGE COMMUNICATION IN ENGLISH. THE CONTROL GROUP WAS DRAWN FROM OTHER INDIAN AND NON-INDIAN CLASSROOM SITUATIONS, INDIAN CLASSROOMS SUPERVISED BY THE INDIAN SERVICE, AND PUBLIC SCHOOL CLASSROOMS ENROLLING NO INDIAN CHILDREN. AN EXTREME AMOUNT OF EDUCATIONAL RETARDATION EXISTED. LACK OF TEACHER UNDERSTANDING OF THE CULTURES OF THE CHILDREN THEY TEACH, READING RETARDATION, DIFFICULTIES IN UNDERSTANDING ENGLISH AS A SECOND LANGUAGE, AND PROBLEMS IN TEACHING SCIENCE AND ARITHMETIC WERE EMPHASIZED. RECOMMENDATIONS WERE MADE FOR FURTHER STUDIES OF CULTURAL DIFFERENCES, BILINGUAL PROBLEMS, AND REMEDIAL EDUCATION. (GC)

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INDIAN RESEARCH STUDY

FINAL REPORT
SECTION I

Miles V. Zintz, Director

College of Education
The University of New Mexico
Albuquerque

1957-1960

SECTION I OF TWO SECTIONS

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THE INDIAN RESEARCH STUDY

THE ADJUSTMENT OF INDIAN AND NON-INDIAN CHILDREN IN THE PUBLIC SCHOOLS OF NEW MEXICO

Miles V. Zintz, Director

FINAL REPORT

SECTION I

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PART I

INTRODUCTION TO THE RESEARCH STUDY

CHAPTER I

INTRODUCTION

I. THE GEOGRAPHICAL SETTING

New Mexico is the home of people belonging to several different ethnic groups. By 1957, the school population included approximately 20,000 Indian children of Pueblo, Navajo, and Apache origin, 80,000 Spanish-American and Mexican-American children, and 100,000 Anglo-American children. In 1950, Congress passed two laws which were intended to change the traditional system of educating all Indian children in federal schools operated through the Bureau of Indian Affairs in the Department of the Interior. This legislation provided incentive to public schools to make public school education available for all Indian children and youth in their districts. Local school districts were reimbursed for both the cost of buildings to house Indian children and the cost of educating these children each school year. The two laws are commonly called Public Law 815 and Public Law 874.

Through the years, evidence had been assembled to indicate that Indian children demonstrated serious educational retardation on tests of academic achievement.[1] The 1958 study, *The Indian Child Goes to School*, showed that

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[1] L. Madison Coombs, *et al.*, *The Indian Child Goes to School* (Washington: United States Department of the Interior, Bureau of Indian Affairs, 1958); Kenneth E. Anderson, *et al.*, *The Educational Achievement of Indian Children* (Washington: Bureau of Indian Affairs, 1953); Shailer Peterson, *How Well Are Indian Children Educated?* (Washington: Bureau of Indian Affairs, 1948); Lewis Meriam, *The Problem of Indian Administration* (Baltimore: Johns Hopkins Press, 1928).

Indian children in public schools performed significantly better than Indian children in Bureau and mission schools. Also, segregation of Indian children into schools for only Indian children became less acceptable as a means of giving all children equal opportunity for self-realization in the American culture.

With the passage of Public Laws 815 and 874, public schools moved rapidly in their efforts to reorganize their school districts to accommodate the Indian children. Many educators were alert to the problems in the areas of curriculum, psychological adjustment, and general counseling. Considerable evidence existed from other disciplines to point up some of the difficulties.

II. HISTORICAL PERSPECTIVE

There are many significant historical antecedents in the formation of present-day living patterns among the peoples of the Southwest. It is not enough that educators be *aware* of these antecedents that are inter-related with all the problems of language, culture, and experience barriers which promote educational retardation among the children of minority groups. Volumes have been written to depict the histories of the Pueblo,[2] the Navajo,[3] the Apache,[4] and the Spanish-American[5] people in New Mexico.

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[2] Ruth Benedict, *Patterns of Culture*, Part IV (New York: Penguin Books, Inc., 1934); Edward Dozier,"Rio Grande Pueblos"(unpublished manuscript, Northwestern University, Evanston, Illinois, 1958); Fred Eggan, *Social Organization of the Western Pueblos* (Chicago: University of Chicago Press, 1950); Elsie Clews Parsons, *Pueblo Indian Religion*, 2 Vols. (Chicago: University of Chicago Press, 1939); Ruth Underhill, *First Penthouse Dwellers of America* (Santa Fe, New Mexico: Laboratory of Anthropology, 1945).

[3] Charles A. Amsden, *Navajo Weaving: Its Technique and History* (Santa Ana, Calif.: Fine Arts Press, 1934); Clyde Kluckhohn and Dorothea Leighton, *The Navajo* (Cambridge: Harvard University Press, 1956); Leonard McCombe, Evon S. Vogt, and Clyde Kluckhohn, *Navajo Means People* (Cambridge: Harvard University Press, 1951); Ruth Underhill, *Here Come the Navajo*, *Indian Life and Customs*, No. 8, William W. Beatty, ed. (Lawrence, Kansas: Haskell Institute Printing Shop, January, 1954); Robert W. Young, ed., *The Navajo Yearbook* (Washington: Government Printing Office, 1957).

It seems important to mention here four specific antecedents in history which have special importance. They are (1) The Pueblo Revolt of 1680, (2) the Navajo's "long walk," (3) the stock reduction program of the Navajo, and (4) the intrusion of the Anglo population which destroyed the economic way of life of the Spanish-American people.

These incidents are particularly important in understanding the resistance of Indians and Spanish-Americans to the Anglo immigration. The resultant behavior of both groups may have much to do with their slow acculturation process in education.

The Pueblo Revolt of 1680

From the earliest immigration of Spanish colonists to the Rio Grande Valley in the seventeenth century, a concentrated effort was made to convert all the Indians to Catholicism. Dozier describes the policy of the Spanish in their attempts to establish Catholicism in the villages:

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[4] Morris Opler, An Apache Lifeway (Chicago: University of Chicago Press, 1941); C. L. Sonnichen, Mescalero Apaches (Norman: University of Oklahoma Press, 1958).

[5] John H. Burma, Spanish-Speaking Groups in the United States (Durham, N.C.: Duke University Press, 1954); Margaret Clark, Health in the Mexican-American Culture (Berkeley: University of California Press, 1959); Charles P. Loomis, Informal Groupings in a Spanish-American Village (Washington: United States Bureau of Agriculture and Economics, 1940); George I. Sanchez, Forgotten People (Albuquerque: University of New Mexico Press, 1949); Lyle Saunders, Cultural Differences and Medical Care: The Case of the Spanish-Speaking People of the Southwest (New York: Russell Sage Foundation, 1934); Loyd S. Tireman, Teaching Spanish-Speaking Children (Albuquerque: University of New Mexico Press, 1951); Sister Lucia Van Der Eerden, Maternity Care in a Spanish-American Community of New Mexico, Anthropological Series, No. 13 (Washington: Catholic University of America Press, 1948); Paul A. Walter, Jr., "Spanish-Speaking Americans," Race and Cultural Relations (New York: McGraw Hill Book Co., 1952); Sister Frances Jerome Woods, Cultural Values of American Ethnic Groups (New York: Harper and Brothers, 1956).

> Seventeenth-century records are replete with the attempt to eradicate native ceremonies by the use of force. Kivas were raided periodically and masks and ceremonial paraphernalia of all kinds were burned and destroyed. These Indian leaders who persisted in conducting ceremonies were executed or punished in a variety of ways. The Encomienda system in New Mexico was intended to civilize the Indians and to make them Catholics by placing them in domestic service and by forcing them to labor in the fields managed by Colonial officials. The missionary program competed with the Encomienda system in forcing the Indians to abandon their native practices and was equally coercive and brutal. To supplant native ceremonial patterns and beliefs, missionaries baptized Indians, forced attendance at mass and made instruction in Catholic doctrine compulsory in missionary establishments.[6]

The ingenious organizational abilities of the many pueblos have been described to explain the means by which all the separate pueblos on a designated day revolted, killed many of the Spanish priests and soldiers in the area, and forced every other Spaniard to retreat below the Mexican border. This suggests that an all-pueblo council functioned in 1680 much as the All-Pueblo Council functions today for the existing nineteen pueblos.

Although this revolt occurred 280 years ago, the details of its happening have been passed from generation to generation through very effective retelling. Many of the older people in the pueblos today react to the events of the revolt almost as if they personally experienced it.

In the exercise of many of their religious ceremonies, the significance of the revolt may be exhibited in adult behavior. Outsiders, including school teachers in pueblo schools, are asked to leave when these secret ceremonies are to be held. On occasion when an Indian is married to a non-Indian in the pueblo, the non-Indian is asked to leave during the performance of these rites. During the Shalako ceremony at Zuni each year, many Zunis hope that Spanish-Americans will not come to watch.

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[6] Dozier, op. cit., p. 2.

The Long Walk[7]

When the Mexican Territory was annexed shortly after 1846, the Navajo began to feel the presence of American troops in military outposts in the Southwest. Amsden indicates that the Navajo apparently was not greatly concerned about this in the 1850's.

> A great believer in talk he [the American] seemed to be; treaties were his solution for every trouble, with much big talk about peace and friendship. That was probably because his soldiers obviously did not know much about the country, or about Indian fighting, or because Big Chief Washington was afraid to lead his own war parties against the powerful, swift-riding Navajo.[8]

When many of the American troops were transferred eastward during the Civil War, however, raiding parties against pioneer settlers increased, and the United States Army was assigned the task of completely subduing the Navajos. Kit Carson and his forces, in 1864, corralled about 8,000 Navajos and marched them 300 miles from northeastern Arizona to Bosque Redondo, near Fort Sumner, New Mexico, on the Pecos River.

An attempt was made to convert the Navajo men into quiet farmers. After five years without successful crops, the Navajos were released and returned to northeastern Arizona and northwestern New Mexico. Amsden describes the terms and evaluates the situation:

> So, on June 1, 1863, another Navajo treaty took its place in the long series. . . . It was drawn to encourage farming (for the men must be kept busy at something besides raiding), with free implements and seeds, a tract of land (not over 160 acres) to each head of a family wanting it, and a small clothing allowance yearly for ten years. It provided schools as needed, one for every thirty prospective pupils. Fifteen thousand sheep and goats were to be bought for the tribe (in fact, thirty thousand were bought). . . . The conquered Navajo set forth

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[7] Le Roy Condie, "The Effect of Cultural Difference in the Education of Navajo Indians" (unpublished monograph, University of New Mexico, Albuquerque, 1958), pp. 28-34.

[8] Charles Avery Amsden, Navajo Weaving: Its Technique and History (Santa Ana, California: The Fine Arts Press, 1934), p. 154.

> from the Bosque on June 18, 1868, and on November 1 of that year Agent Dodd at New Fort Wingate formally assumed charge of 7,111 Navajo Indians. . . . The Navajo were home again, a sadder and wiser tribe.[9]

The Stock Reduction Program

In the 1930's, the Navajo population was increasing rapidly. Numbers of sheep, goats, and horses were increasing also. The limited grazing which was possible on the desert and semi-desert rangeland was being completely destroyed by over-grazing. The Bureau of Indian Affairs recognized the necessity to upgrade the poor quality of livestock and to decrease the number of livestock on the range. This they proceeded to do. The program was explained to the Navajos by Anglo agents. The fact that fewer animals could yield greater return than the present numbers if better breeding stock was introduced was also explained.

It is probably true that most Navajos did not really understand the program. In the first place, it seemed to the Navajo that his economy was being destroyed--literally taken away from him. While it was being done peacefully, it was reminiscent of Kit Carson's conquest seventy-five years before. In the second place, it was contrary to the Navajo's philosophy of life. As the flocks increased, _if man was living in harmony with nature_, so did the rains; and thus the grass and forage would also increase. Reducing the stock was, in effect, doubting the powers of the supernatural. _This was basically wrong from the point of view of the Navajo_.

Because of the economic poverty of the Navajo people, the stock reduction program left a resentment and bitterness that will be remembered for a long time by the older people.

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[9] _Ibid_., pp. 167-168.

Decline of the Spanish-American Culture

When the Anglo-American immigration into New Mexico made itself felt in the mid-nineteenth century, the Spanish-American was totally unprepared for the way of life of the ranchers who brought "big business" to New Mexico. The subsistence economy in which no more was produced than was needed, the particularistic nature of a people in which there were considerable communal exchange and respect, and an economy which exchanged goods and services more than money were no match for the intruders.

The Anglo had a system of taxation that was both unknown and not understood by the Spanish-American. The Anglo had technical, legal ways of establishing ownership of land, and the fact that one had lived there for generations did not prevent his eviction by court order. Spanish land grants which were to be respected forever and which had passed down through family inheritance were taken legally from Spanish families by greedy speculators. Stock-raising corporations leased land, over-grazed it, took their profits, and left.

The money economy of the Anglo also permitted Anglo merchants to encourage long-term credit accounts with families. This was sometimes a means of serious exploitation since the merchant was clearly in a position to "pay" in credit the lowest possible prices for produce in season in order to settle the long-standing accounts.

These kinds of experiences suggest briefly how the Spanish-American population may have soon learned to mistrust the Anglo. In rejecting the culture, they also rejected the language. The institution of education, which might have speeded their acceptance and ability to compete in the dominant culture, was also devalued by the older Spanish-Americans.

III. THE CULTURAL SETTING

Until a few years ago, the literature emphasized that the difference in the learning abilities of Anglo-American children and minority group children (e.g., Negro, Spanish-American, Indian) was genuinely one of innate capacity. As late as 1924, one author stated that the extent to which a child from one of these minority groups would be able to achieve well in comparison with Anglo children would depend upon the amount of Anglo blood which flowed in his veins![10] Recent research has dispelled the fallacious logic in this writing. The differences that exist between cultural groups can no longer be attributed to innate intelligence. According to Havighurst:

> The conclusion which is drawn by most social scientists from the data on Indian cultures and Indian intelligence is that the American Indians of today have about the same innate equipment for learning as have the white children of America. But in the Indian tribes, which have preserved their traditional cultures to some extent, there is a limited motivation of children for a high level performance in schools and colleges.[11]

The difference is believed to lie in the cultural values and beliefs of each respective group.

The cultural anthropologist summarizes the "difference" in this way:

> The problem is a social problem involving the adaptation of individuals to a new type of life. It is an anthropological problem concerned with the processes of cultural change; it is an administrative problem which concerns local, state and national

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[10] Rudolf Pintner, Intelligence Testing (New York: Henry Holt and Company, 1924), p. 395. See also Thomas R. Garth and James E. Garrett, "A Comparative Study of the Intelligence of Indians in U.S. Indian Schools and in the Public or Common Schools," School and Society, 27:178-184, Feb.11, 1928.

[11] Robert J. Havighurst, "Education Among American Indians: Individual and Cultural Aspects," The Annals of the American Academy of Political and Social Science, 311:113, May, 1958.

> officials who must attempt to achieve an almost prophetic insight on which to base their action and policies. Fundamental to all the other problems of people of New Mexico is that of the very different basic personalities of individuals raised in different cultures.[12]

The importance of the system of values of each ethnic group is emphasized by the sociologist:

> . . . To understand the person, it is necessary first to know and to appreciate the culture into which he is born, which exercises its inexorable influence throughout the span of life and which determines the place and ceremonial of his burial rites.[13]

The psychologist cautions against criticism of behavior which does not conform to one's own expectancy pattern:

> Ideas of beauty vary from one culture to another. In some, fat women are preferred to all others. Deformation of the body, beauty scars, artificially elongated necks, enlarged lips, and pointed teeth are well known, to say nothing of the effects produced by head-flattening and also by the modern girdle. In our less critical moments we are likely to think that there are a lot of people in the world who do not know how to act like human beings. In our more serious reflections we must realize that anything is human that typifies the behavior of human beings. There are no other standards of humanity. In any event we cannot understand the behavior of peoples of different cultures in terms of our own system of values, but must seek explanations in their own cultural histories.[14]

The educator who studies bilingual problems of children recognizes that a child's reading, his vocabulary, and his linguistic ability are rooted in a whole set of cultural values.

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[12] Florence Hawley Ellis, The Indian Problem in New Mexico (Albuquerque: Division of Research, Department of Government, University of New Mexico, 1948), p. 4.

[13] Francis J. Brown, Educational Sociology (New York: Prentice-Hall, Inc., 1948), pp. 60-61.

[14] James B. Stroud, Psychology in Education (New York: Longmans, Green and Co., Inc., 1946), pp. 233-234.

> The reading problems of most bilingual children arise, generally, from the home situation. The economic status, the education of the parents, the general cultural level, the emotional pattern, the health standards, mobility, rural or urban residence, and the attitude toward the English language are interlocking factors. The product of all these factors is the child with whom you work.
>
> A foreign cultural background does not mean inferiority; it means difference: difference in attitude of the parents toward the significance and value of education; difference in the belief in general education; in the extent of personal sacrifices needed to send children to school; in willingness to deprive oneself of the income he might receive if the child left school and went to work. These items bear directly on the matter of regularity of attendance and the age of dropping out of school and consequently on the child's reading ability.[15]

The interdependence of the language of the child and his cultural background is well stated by Davies:

> To change a child's medium of instruction is surely to change his culture; is not culture bound up with language? And if the language should disappear, can the culture remain? Everyone must have his own orientation to life, and language provides the most natural means of reacting to life. In the deepest things of the heart, a man or a woman turns naturally to the mother tongue; and in a child's formative stages, his confidence in that tongue must never be impaired.[16]

The problem of integration of local cultures is described by Hemsing:

> New Mexico has a fabulously rich but neglected storehouse of experience for society in the unique history of this state. The last century, particularly, constitutes a remarkably condensed summary of the social development from the Stone Age to the Atomic Age. One finds here man's most vexing and persistent problems.[17]

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[15] Loyd S. Tireman, "The Bilingual Child and His Reading Vocabulary," Elementary English, 32:33, January, 1955.

[16] R. E. Davies, Bilingualism in Wales (Capetown, South Africa: Juta and Co., Ltd., 1954), p. 14.

[17] William Moyer Hemsing, "History and Trends of Indian Education in New Mexico under the Administration of Federal and State Governments" (unpublished Master's thesis, University of New Mexico, Albuquerque, 1953), p. 209.

Hemsing proposes that New Mexico become a permanent laboratory of experimentation in human living, dedicated to the continued study of free human interaction. Such experimentation should blossom and flower through a democratic public school system. The old problem of integration of cultures, Anglo-American, Spanish-American, Navajo, Pueblo, and Apache, would be the main problem. The scope of research and investigation into this understanding of each other's peoples should be unlimited and all-inclusive.

Hemsing points out that the greatest needs of teachers in New Mexico schools include:

1. Thorough grasp of the intercultural and inter-racial concepts with practical understanding of their application among the Indian and Spanish-American people in New Mexico.
2. Awareness of an ability to deal with the problem of bias in opinions.
3. An ability to state and solve problems, to express clearly ideas in words, so that the meaning is clear to the person who hears, as well as to the person who speaks.
4. An ability to attack the mote in one's own eye, as well as to identify the mote in others' eyes.
5. To teach dealing with bias, selfishness, steam rollering and other autocratic practices in groups and with individuals.
6. The ability to practice and teach how to get along harmoniously with people. [18]

Reifel, in his analysis of cultural factors in social adjustment, had summarized four main differences between the American way of life and the traditional pattern of Indian systems of living.

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[18] *Ibid.*, p. 207.

1. In the American way of life, those of us who are carried along in its social stream are future-oriented. We think in terms of what is ahead. In contrast, those whose lives are governed by the values of the Indian life are oriented to the present; they are prone to live in the present--the "Exultation of the now." The non-Indian life is one of "conquest over nature" as against the Indian way of "harmony in nature." Another way of comparing them is to describe the former as existing in a state of anticipation, while the latter finds nothing to look forward to and feels that the essence of living is to be found in the present timelessness.
2. Time, in the sense of measuring duration by clocks and days-of-the-week calendars as we do, is not important to the person caught in the Indian way of life.
3. Saving as a means to achieve economic development has not been a part of the economic life of the Indian in his nomadic state where he lived largely by hunting and food gathering (direct appropriation).
4. Habituation to hard work, including drudgery for over a period of years, if necessary to earn a living, was not in the Indian system, particularly for the men.[19]

These differences in the way people pursue their goals in life are helpful in appreciating the obstacles to successful teaching of Indian children.

Specific examples of the cultural difference are given by Adair and Deuschle in their discussion of the problems of the physician on the Navajo Reservation.[20] Some of these observations are cited since experiences of classroom teachers in understanding the behavior of children are analogous to experiences of doctors in dealing with their patients. Adair and

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[19] Ben Reifel, "Cultural Factors in Social Adjustment," Indian Education, No. 298 (Haskell Institute: Bureau of Indian Affairs, April 15, 1957), p. 3.

[20] John Adair and Kurt Deuschle, "Some Problems of the Physicians on the Navajo Reservation," Human Organization, Volume 16, No. 4, Winter, 1958, pp. 19-23.

Deuschle state that, currently, each physician must find out much of this information for himself. They feel that a handbook revealing relevant cultural materials would be most helpful. Since the Navajo Indians have been subjects of intensive study by anthropologists for years, much of this information could be synthesized from the abundant literature. Classroom teachers also need to have readily available the knowledge of cultural differences and practices that would help them understand the children with whom they work.

Adair and Deuschle describe a few pitfalls of the inexperienced physician:

> The doctor may be baffled by the refusal of a patient's relatives to donate blood for indicated surgery or the treatment of anemia. He may not realize that the concepts of sympathetic and contagious magic are still strongly believed in by most of the Navajos. In this instance, if the patient were to die, then the donor of the blood might also sicken and die.[21]
>
> He may ask the ward orderly to take care of a corpse, and get an outright refusal; or if the order is carried out, the orderly may request the following day off so that the correct ritual may be performed to cleanse the body of the evil that comes from close associations with the dead.[22]
>
> . . . The harried physician may be chagrined to discover that the hours of precious time he spent convincing the husband of one of his patients to continue hospital treatment had been completely wasted. The family member who really wielded the power of decision in this matter--the patient's grandmother--had been directed to the waiting room to sit while the parley had taken place.[23]
>
> He may fail to understand the "request for medical leave" from the sanatorium by a patient who wants to go home for a "sing," which is a Navajo healing ceremony.[24]

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[21] Ibid., p. 21.

[22] Ibid., p. 21.

[23] Ibid., p. 22.

[24] Ibid., p. 21.

> The Navajos do not have the same concept of time as we have in our society. Thus a sick Navajo living in the bottom of a canyon may decide to saddle his horse and ride to the nearest field clinic to obtain some medicine late Friday afternoon. When he finally arrives at the clinic on Friday night he finds the clinic doors locked and the doctor away for the weekend. The Navajo patient cannot understand why he does not get medical service after his arduous trip to the clinic.[25]

Ruth Benedict reminds us that all peoples have contributions to make when the process of cultural diffusion occurs. The extent of cultural diffusion which takes place when minority groups attempt to merge with a dominant culture will be discussed in Chapter IV.

> When Columbus discovered America, corn, "Irish" potatoes, tobacco, and "Boston" beans were unknown in Europe. They had been developed by American Indians. Within ten years corn was being planted in Central Asia and in the interior of Africa, and African tribes today think that corn was given them by their own gods "in the beginning."[26]

Washburn emphasizes the bias found in the thinking of the Anglo-American throughout American history toward the American Indian.[27] He points out that people have labeled the Indian in terms of the relationship which the Anglo has had with him. When the colonists came to New England and needed the help and support of the Indians who befriended them--taught them to plant and loaned them food from their storehouses--the settlers named these kind people "Noble Savages."

Later, in the settling of this country, Anglo-Americans wanted the lands of the first Americans. Because the Indians felt called upon to defend their own homelands, they became known as "Treacherous Savages." In due course, the Anglo-American dominated the entire country; the Indians were incarcerated in reservations subservient to the operational procedures of Anglo officials. As they became dependent upon Anglo care and submitted to Anglo decision-making, they were more than once referred to as "Filthy Savages."

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[25] Ibid., p. 23.

[26] United States Bureau of Indian Affairs, Orienting New Employees in the Branch of Education (Chilocco, Oklahoma: Chilocco Indian School Press, 1956), p. 9.

[27] Wilcomb E. Washburn, "A Moral History of Indian-White Relations: Needs and Opportunities for Study," Ethnohistory, 4:47-61, Winter, 1957.

The Indian people are now at the threshold of achieving for themselves desirable economic and social status in present-day life. Will the Anglo-Americans fear them as competitors and hail them as "Incompetent Savages," or will they face realistically the unjust and improper status accorded the Indian population at times of stress and tension in the past, and make sure that every Indian is afforded his individual opportunity to win equal status in the dominant culture?

The Anglo-American, generally, has only poorly understood the place of the American Indian in national history. He has grown up with many prejudices that influence him to believe the Indians were savage, treacherous, and deceitful. The American Indian has been rigidly stereotyped by many of his fellow citizens. The raiding done by a small number of Apaches in the eighteenth and nineteenth centuries in the Southwest has provided a tremendous amount of melodrama for the motion picture and television industries. The history learned by many Anglos has included the notion that "the only good Indian was a dead Indian." The negative attitude that prevailed in colonial times persisted through the years, as is indicated in the report of J. Madison Cutts to the United States Army about 1850 in which he says of the Apache Indians:

> Every Apache is a born robber and murderer. Extermination, whether in war or under the form of reservations and legal justice, is their certain fate; and the quickest way is the most merciful.[28]

Cutts summarizes the section of his report on the Navajo by saying that _he does believe they can be civilized_.

This brief presentation of ideas about the cultural values emphasizes that while the cultural difference has been identified, labeled, and given considerable credence, it has not been sufficiently explored by educators. Teachers generally have not been oriented sufficiently so that they could adequately bridge the gap in their own interaction with Indian children.

IV. THE PURPOSES OF THE PRESENT STUDY

The five objectives of the present research study were:

1. To identify and define factors of cultural and environmental differences between Indian and non-Indians. The obvious cultural differences are those observed in forms of dress, habits of courtesy, eating habits and favorite foods, barter, trade and media of exchange, and modes of travel. More basic cultural differences are manifested in the attitudes, ideals, and beliefs held by a cultural group. Although anthropologists have studied intensively many of the Indian groups of New Mexico and have conducted field studies in New Mexico for several decades, educators have not made use of their findings. The first objective of this study was to rewrite the pertinent literature in the language of the educator. Such a handbook of usable information should be helpful to both pre-service and inservice classroom teachers of Indian children.

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[28] Young, _op_. _cit_., p. 235.

2. To alleviate conflicts which arise because of differences in cultural backgrounds. The personality of the child is well developed before he enters the classroom at the age of six. When he enrolls in school, his behavior must be interpreted in terms of causal factors in his background of experience. The teacher will need to understand the reasons why the child behaves as he does. This interpretation must be made in light of the life values which are learned from his family, neighborhood, church and associates. An attempt will be made in Part II of this report to show how cultural practices affect methods of discipline, emotional response, social interaction (child with child, child with adult, and adult with adult), identification of sex roles in children, emergence of the modal personality, and the rearing of children.
3. To investigate ways to adjust the school curriculum in light of the child's background of experience so that the course of study will be meaningful and useful for him.
4. To find ways to increase understanding on the part of parents toward the purposes of the school and the methods by which the school attempts to achieve its purposes. The emphasis in such an enterprise is one of cooperation with the parents rather than merely "reporting to" parents.
5. To suggest ways to improve teacher preparation (both pre-service and in-service) in view of the inter-cultural problems to be faced.

V. THE ADMINISTRATION OF THE RESEARCH STUDY

The Staff of the Research Study. Many people worked directly in the research program to complete the three-year study. The study was directed by a member of the staff in the College of Education who also taught courses equivalent to three-fourths of a full teaching load.

The coordinator of the research study was a quarter-time graduate student in the College of Education. Two additional graduate students were employed during the last two years of the study on half-time research assistantships. A full-time secretary was employed throughout the three years of the project. An advisory committee met with the research staff for scheduled evaluation sessions of present status and prognostication of future plans. The advisory committee included the dean of the College of Education, the Director of Schools in the United Pueblos Agency, the Director of Indian Education in the State Department of Education, and representatives from the Navajo, Pueblo, and Apache Indian groups in New Mexico.

The Field Work of the Research Study. Eighty-eight teachers enrolled in a workshop entitled "Bicultural Education in New Mexico."[29] These workshop participants evaluated much of the writing of the research staff and offered illustrative material which was incorporated in monographs made available to pre-service and in-service teachers.

Elementary teachers in pilot schools worked with the project staff in the completion of the field studies reported herein. Thirty-five elementary teachers participated in Saturday workshops held monthly throughout the third year of the project to make the field studies possible. The enthusiasm of these thirty-five teachers was most commendable.

Four doctoral dissertations have been incorporated in the field work done by the four doctoral candidates working as research coordinator and research assistants in the project. Four master's theses have been completed also as part of the field work. These studies report empirical data concerning the extent to which the problem of learning English as a second language has been a primary curriculum problem in the pilot schools.

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[29] This was a seminar, offering graduate credit, taught during the 1959 and 1960 summers and the 1959-60 fall semester at the University of New Mexico.

The field work of the research study was planned for Tuesdays, Thursdays, and vacation periods from university classes.

VI. ORGANIZATION OF THE REMAINDER OF THE REPORT

The remainder of the report will contain three sections. Part II contains Chapters II, III, IV and V. Chapter II invites the teacher to examine his attitudes toward the social-class orientation in which he lives and works, the impact of Judeo-Christian influence on teacher attitudes, and the role expectations of teachers in their jobs.

Chapter III will discuss the goals of life of people in all societies. The common basic institutions through which value systems develop and are reinforced will be discussed. A number of conflicting values as found in the traditional cultures of minority groups and the middle-class orientation of the Anglo teacher will be presented and discussed.

Chapter IV will discuss the acculturation process and will show that Indian and Spanish-American people in New Mexico are in a state of transition with respect to acceptance of change. Individual differences within groups cause some families in the minority ethnic groups to be completely acculturated to middle-class Anglo values, while others are still in an unacculturated, traditional state. Changing practices in the economy, health, and education of minority groups will be discussed. With respect to the institution of religion, it is believed that teachers need an awareness of differences and a tolerance which permits people to choose freely their appropriate religious practices.

Chapter V will present bicultural problems in relation to school achievement. The relation of language to culture, the problems of educational retardation, and the factors influencing the learning of English as a second language will be discussed.

Part III of the report will present the individual studies in methodology that were carried on during the last two years of the three-year period.

Part IV will present a summary of the present study and implications for further research. Informal test instruments will be found in the Appendices.

PART II

THE EFFECT OF CULTURAL DIFFERENCE

CHAPTER II

THE TEACHER: AN UNDERSTANDING OF SELF

I. INTRODUCTION

Teachers in classrooms enrolling children from different cultural backgrounds must look with maturity upon the attitudes and beliefs of their students.[1] Three facets of the teacher's growth toward maturity which will be investigated in this chapter are (1) social-class orientation of teachers with its heavy emphasis on middle-class values, (2) the impact of Judeo-Christian dogma on teacher attitudes and flexibility in thinking patterns, and (3) the role-expectations of classroom teachers as evaluated by the child in school.

II. SOCIAL CLASS ORIENTATION OF TEACHERS

One of the outstanding features of Anglo society is social stratification which results in a hierarchical arrangement of social levels called social classes.[2] Mulligan gives a definition of social class:

> The culture theory of class conceives of social classes as selective cultural grouping which give to their members a similar stock of ideas, values, feelings, attitudes and forms of behavior. It recognizes the fact that people live, work, play and think on different class levels. The differences between classes are not merely financial or external standards of living, but encompass the entire range of social behavior:

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[1] An excellent chapter in Harry A. Overstreet's The Mature Mind (New York: W. W. Norton Co., Inc., 1949), pp. 46-71, discusses criteria of maturity.

[2] W. Lloyd Warner and Leo Srole, The Social Systems of American Ethnic Groups, Volume III (New Haven: Yale University Press, 1945), p. 2.

> occupation, vocation, manner of speaking, social and sexual attitudes, musical and literary tastes, and philosophy of life.[3]

A commonly used grouping divides society into six social classes: the upper-upper, the lower-upper, the upper-middle, the lower-middle, the upper-lower and the lower-lower.

Warner and Srole describe the social classes as six social strata of the community in their study of ethnic groups in a representative American town which they called Yankee City. These strata are of importance in evaluating the behavior of the people of a community.

> The top level, or upper-upper class, consists of members of "old families" who are born to their position; their family genealogies show them to be products of several generations of upper-class living. This old aristocracy is the keystone in the Yankee City status system. Below this level are the "new families" or newly rich (lower-upper) who are busy transforming their money into acceptable behavior through participation with those who preceded them to the top level. On the step below them are the "pillars of society," the successful men and women, who are the powerful upper-middle class who do things and see that things are done in Yankee City. These three classes, comprising no more than 15 per cent of the total, are "the big people" who are above the common run of men.
>
> Below them, but at the top of "the little people," are the members of the lower-middle class, the small tradesmen, the skilled workers, and the white-collar workers who cling to the virtues of the "protestant ethic," despite the fact that many are members of other religions. Beneath them are the poor and respectable workers, who hope and strive to do better than they are doing, but who worry for fear of falling into the class below them, the lowest in society, where the "shiftless Yankees" and the "ignorant immigrants" are found.[4]

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[3] Raymond A. Mulligan, "Socio-Economic Background and College Enrollment," *American Sociological Review*, 116:188-189, April, 1951.

[4] Warner and Srole, *op. cit.*, p. 2.

Warner and Srole give the percentages of the total population in each of the six social classes in Yankee City as follows: Upper-upper, 1.45 per cent; lower-upper, 1.57 per cent; upper-middle, 10.30 per cent; lower-middle, 28.36 per cent; upper-lower, 32.88 per cent; and lower-lower, 25.44 per cent.[5]

Havighurst and Neugarten present a diagram showing the per cent of the population expected in any given area to belong to the different social classes.[6]

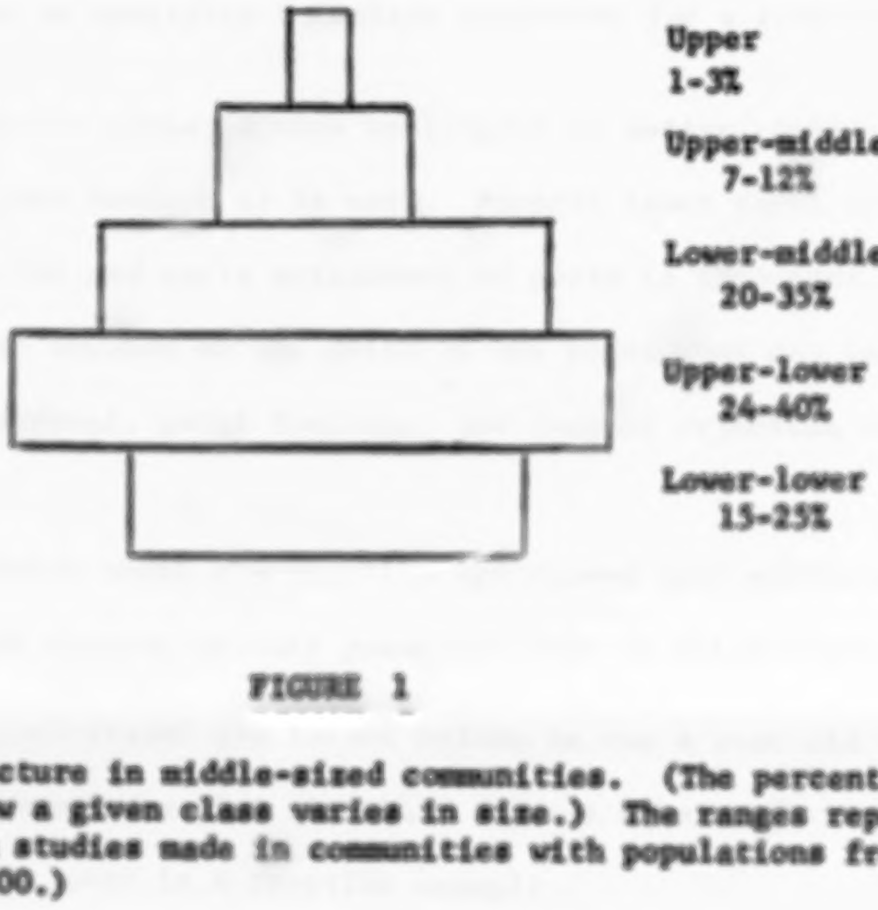

FIGURE 1

The class structure in middle-sized communities. (The percentage ranges show how a given class varies in size.) The ranges reported here come from studies made in communities with populations from 5,000 to 100,000.)

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[5] *Ibid*., p. 71.

[6] Robert J. Havighurst and Bernice L. Neugarten, *Society and Education* (Boston: Allyn and Bacon, Inc., 1957), p. 18.

It is evident from the above figure that the upper classes do not constitute any large proportion of the total population.[7] It is well recognized, too, that they tend to send their children to private schools. Thus, they are not an active concern of public education.

Middle-class groups make a virtue of self-control, foresight, individual achievement, and responsibility. By punishments and rewards, they implant differences in values in their children from the first year of life.

> Mobility in the social classes requires drive and purpose, and willingness to sacrifice immediate pleasures for a greater future gain.[8]

The upper-middle class is made up largely of active, ambitious people. Work is important just because it is work. Parents teach their children to work hard. Successful and early attainment of goals is important. Parents often exercise their demands on the child to the point that any failure is sure to bring disapproval, guilt feelings, and fear of rejection on the part of the child.

It is this drive which a generation ago caused many middle-class mothers to make early, harsh demands on very young children in child-rearing practices. The attempt to "toilet-train" the infant before he was a year old in spite of the pediatrician's knowledge that the child did not attain sphincter control until several months later is a specific example.

In middle-class life, education is extremely important. The upper-middle class parents feel that almost all their children must attend college. The lower-middle class also values education for the ways in which it encourages social mobility to the next social class. About a third of the lower middle-class children are likely to go to college.[9] This class sees its opportunity to improve its status and to acquire more and more of the middle-class value patterns through hard work, climbing the ladder of success, and obtaining formal education. The lower-middle class provides the majority of teachers in the public school system. There is a trend to recruit more teachers from the upper-lower class.[10]

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[7] Sociologists believe the upper-upper class is negligible in present-day society.

[8] Havighurst and Neugarten, *op. cit.*, p. 48.

The major drives of the middle-class teacher are:

1. Achievement and early success.
2. Work for "work's sake." It is "good" to work hard.
3. Getting educated.
4. Being responsible. This incorporates self-discipline, self-control, foresight as conservatively conceived in a pre-destined divine plan.
5. Shaping one's own destiny.

Lower classes do not view education as middle classes do. Lower-class parents tend to believe that their children are impertinent or obtuse if they try to achieve education in order to climb the ladder of class difference. They are apt to think that quitting school early and earning money through hard work is superior to education and placement in white-collar or sedentary jobs.

Lower-lower class children, with many conflicting values between them and middle-class teachers, are apt to be in need of much remedial teaching and give evidence of much educational retardation. The parents are often disinterested in school, and the home is able to afford little stimulation toward home study or opportunities for vicarious reading experiences. The background of experience, or life-space, of these children is inclined to be severely limited.

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[9] *Ibid*., p. 22.

[10] *Ibid*., p. 359.

Teachers must remember that in some schools the majority of the children come from the lower-lower and upper-lower classes. Each class has a set of value orientations which corresponds to its everyday practices or life style. The school must face conflict situations arising from value patterns of the middle-class teacher and the lower-class child. The schools have presented only a limited aspect of American culture as the sum total of the curriculum.

Davis says:

> The present curricula are stereotyped and arbitrary selections from a narrow area of middle-class structure. Academic culture is one of the most conservative and ritualized aspects of human culture. . . . For untold generations, we have been unable to think of anything to put into the curriculum which will be more helpful in guiding the basic mental development of children than vocabulary building, reading, spelling, and routine arithmetical memorizing.[11]

III. JUDEO-CHRISTIAN INFLUENCES AND BIASES IN TEACHER'S ATTITUDES

The value system of American society is based on Judeo-Christian doctrine. While it is not inherent in the doctrine, many people look upon Christianity as the "right" way, the "best" way, the "superior" way. Since the American people face many problems within the "Christian" dogmas of their own churches, it is not surprising that there would be much difficulty in reconciling different religious beliefs as divergent as Hinduism, Buddhism, or pre-literate religious rites of the American Indian.

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[11] Allison Davis, Social Class Influences Upon Learning (Cambridge: Harvard University Press, 1952), pp. 97-98.

Teachers in New Mexico must face this problem in their daily contact with both the children they teach and the parents with whom they confer. Therefore, this section will present some of the tenets of the Christian religion and will point out some of the difficulties which some minority groups in New Mexico may have in their acceptance. The need for acceptance of the ideas of others and tolerance for their beliefs is indicated. This idea is a basic tenet of American democracy.

A teacher need not necessarily change his personal beliefs. However, an honest searching of one's present attitudes and beliefs will lead toward greater maturity on the part of the individual teacher.

Such maturity demands that each group be allowed to interpret its religion in such a way as to enable its members to find the most satisfying way of life. Before discussing certain tenets of the Christian faith, quotations are presented to show how other thinkers have tried to resolve the specific beliefs of individual groups.

> Mahatma Gandhi tells about his religion: "I do not want my house to be walled in on all sides and my windows to be stuffed. I want the culture of all lands to be blown about my house as freely as possible, but I refuse to be blown off my feet by any of them. Mine is not a religion of the prison house. It has room for the least among God's creatures, but is proof against insolent pride of race, religion, or color."
>
> Mahatma Gandhi's teaching is: "A Hindu has only to be a better Hindu, a Christian a better Christian, a Moslem a better Moslem. God is neither Hindu, nor a Moslem, nor a Christian. Neither should His children be any one of these exclusively, but all of them cumulatively. Man has a right to inherit the full and broad stream of revelation that has flowed through several channels."[12]

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[12] Prem Nath Sahai, 2400 Years' History of Science in India (Delhi, India: Sahai Shiksha Prasar Kosh, 1958), p. 48.

When an old cacique in one of the Indian Pueblos was asked how it was that the Indians had accepted the Catholic religion from the Spanish Friars and yet had kept their own original religion, he responded in this way:

> We know that there are many religions and many peoples. We know that it is the ambition of all these people to satisfy the one God whom they will meet some day on the mountaintop when they have finished the long trail of life. We know that there are many roads that lead to the mountaintop. Some are rough and rocky and some are smooth and pleasant with beautiful flowers growing beside them. The priests told us that there was only one way. We knew better than this, but we supposed their way might be good for them and because they wanted us to, we were glad to share it with them. Yet, we felt sorry for them that they thought their one language and their one way was the only way. We know that God understands many languages and that He does not care in what language you talk with Him. We helped them build their church and we go to their service one hour on Sunday, but we have much time left to pray to our God and to practice our own religion.

Consideration will now be given to five of the basic tenets of Judeo-Christian teachings held by most people. The total behavior of the majority of people is strongly influenced by these tenets whether or not they subscribe to a specific Christian sect. These five tenets are: (1) The doctrine of original sin; (2) A "blind faith" in a heaven after death which will win anyone a reward for his life on this earth; (3) "Go ye into all the world and preach the gospel"; (4) Jesus died for our sins; and (5) "Remember the Sabbath Day to keep Holy."[13]

The Doctrine of Original Sin

From the Horn Book, children for generations have learned

By Adam's fall
We sinned all.

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[13] Gladys Reichard, "The Navajo and Christianity," The American Anthropologist, 51:66-71, January-March, 1949. This article contains an excellent concise discussion of this problem and includes all five points mentioned here.

The tenet is that a child is born in sin and, therefore, from the beginning has "to be saved." This doctrine, with all its ramifications, creates a great deal of prudery, adjudication, and censure concerning the sex act. The commandments forbidding fornication and adultery are basic and mandatory. Nathaniel Hawthorne's classic, The Scarlet Letter, illustrates the way these mores have been perpetuated. From the standpoint of good mental hygiene, it is necessary for the teacher to see this value broadly in order to incorporate the point of view of other cultures.

In Judeo-Christian communities, inflexible mores control the activities of individual members. This means that many members of the society violate the mores and, as a result, have severe guilt feelings and may be ostracized by the fellow members of the group. The attitudes toward fornication and adultery illustrate this point. The Christian concept dictates that people will not have sexual intercourse before marriage (fornication) and that men and women will not have intercourse with other than marital partners (adultery). Nevertheless, there is adequate documentary evidence to show that these commandments are violated by many Judeo-Christian people.[14]

> Among the social upheavals of our time, we must count a drastic revolution in sexual morals, if not so much in what people do, at least in a recognition of what they do. . . . It is obvious that official morality is widely at variance with actual practice, while psychological principles and personal morals drift uncertainly in between.[15]

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[14] A. C. Kinsey, W. B. Pomeroy, C. E. Martin, and P. H. Gebhard, Sexual Behavior in the Human Female (Philadelphia: Saunders, 1953); A. C. Kinsey, W. B. Pomeroy, and C. E. Martin, Sexual Behavior in the Human Male (Philadelphia: Saunders, 1948); Wayland F. Vaughan, "Sex vs. Conscience," Personal and Social Adjustment (New York: The Odyssey Press, 1952), pp. 246-254.

[15] L. Joseph Stone and Joseph Church, Childhood and Adolescence (New York: Random House, Inc., 1957), pp. 312-313.

Especially for the female, this violation of mores is apt to bring feelings of guilt and anxieties lest she be "found out," and in the event of pregnancy, harsh rejection and severe censure by society. Cultures which place no stigma on illegitimacy and impute no guilt to extra-marital relations are, from the mental hygiene point of view, allowing their people to be much healthier. Men and women in other societies who have not internalized these prohibitions will not have the same qualms of conscience about those acts toward which Western society exercises strong censure. The members of other cultures make these decisions on bases of their own.

> The Navajo believes that reproduction is the ultimate human and supernatural purpose--a man cannot therefore be conceived in sin.[16]

In one small high school enrolling approximately 150 Indian students during a recent school year, seventeen babies were born to high school girls. Some of the girls married the young men who were fathers of their children; others did not.[17]

Faith in Heaven After Death

Although the admonition is that "faith without works is dead," sometimes little emphasis is placed on the "work," and one might well believe that only the "faith of a grain of mustard seed" will win eternal life. Many people continue their immature responses to difficult situations, yet expect a reward in the hereafter without prejudice as to how maturely they faced their problems in the here and now.

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[16] Reichard, op. cit., p. 67.

[17] Observation related by a teacher informant.

A "blind faith" is perhaps best illustrated by the traditional Spanish-American culture in which the small community was predominantly Catholic in faith and led by the priest. In many of these communities, the priest was the only one who had acquired formal learning and reading and writing skills. It was a part of the "blind faith" of these people that they did not need to acquire an education, or wealth, or any particular status since they believed they would all go, with equal status, to an eternal afterlife.

Modern American society is not without its examples of stubborn adherence to outmoded dogma. The Mormons deny full fellowship to the Negro in the belief that his skin color brands him as one who was "disloyal" to the Son of God in a pre-existent world. Members of certain other sects refuse medical attention, even though diagnosis indicates their lives could surely be saved by modern medicines or surgery.

"Go ye into all the world and preach the gospel"

While there are many possible interpretations of this mandate, it has often meant to Christian missionaries that Christianity must be accepted by all peoples everywhere. Non-Christians have been viewed as having no religion at all; consequently, they must embrace Christianity. Because some of these other groups have felt that they have an adequate and satisfying religion of their own, the efforts of these missionaries have often been misunderstood and not accepted.

One of the chief purposes of the chapter on Navajo religion in the *Navajo Yearbook, 1957* is to emphasize to all the readers that the Navajo, as a people, have always had a religion that satisfactorily explains the origin of man, the relationship between man and his maker, the relationship between man and his brother, and the immortality of man.[18] Certainly, in all Indian religions, there is a maximum use of prayer in communicating with the Great Spirit. If the literature is accurate in any degree, Indians pray a great deal more, and more often, than their non-Indian neighbors. Reichard says of the Navajo:

> Proselytism is not so much offensive as incomprehensible to him. Believing that his way of life is invaluable and right, he thinks it should not be dissipated by "taking it out of the tribe." He would not try to convert a neighboring Indian or a white man to his religion; he cannot understand why anyone should try to persuade him to abandon his birthright. Nor can he see why anyone should be willing to give away that which he has gained only by great exertion. His reasonable conclusion is, "Of course your religion is good for you, ours for us. Why should either of us change?" With this rhetorical question he continues on his way without even curiosity about a strange religion from which he is not allowed to select.[19]

"Jesus died for our sins"

> The Son of man must be delivered into the hands of sinful men, and be crucified, and the third day rise again.[20]

This represents another major conflict. Most Navajos and Apaches are, to this day, uneasy in the presence of death, the dead, and the place in which any person dies. In the past, they abandoned the hogan or wickiup in which the person died, and built another one. The dead were hastily buried by a few people who were then ritually cleansed of the evil spirit of the dead person before they rejoined their own families. Further, with the coming of the non-Indians, if the burial of the dead could be left to them, the Indians were very happy to do just that.

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[18] Personal conversation with Robert Young, Assistant General Superintendent, Navajo Agency, Window Rock, Arizona, June 13, 1958.

[19] Reichard, op. cit., p. 70.

[20] St. Luke 24:7, The Holy Bible (Cleveland: The World Publishing Co., n.d.), New Testament, p. 103.

These people were not anxious to accept a new religion, particularly one based upon a philosophy so objectionable to them. Instead, they were intent upon maintaining their ancient harmony-with-nature philosophy.

> He believes that the present good universe was transformed from an evil one so that man could properly fit into it and enjoy it--man is therefore the greatest thing in the universal scheme; he has no reason to abase himself because even the gods exist for his benefit. Instead of humiliating himself, the Navajo seeks through ceremonial to identify himself with deity. He cannot understand the ideals sought through mortification, penance or sacrifice.[21]

Remember the Sabbath Day to Keep it Holy

Indians have been quick to point out that non-Indians observe their religion one hour on Sunday. However, in many cases their unseemly behavior all the rest of the week is difficult to reconcile when it is unexplainable in terms of professed beliefs. In contrast, the Indian feels that he is living his religion every hour every day, consistent with professed beliefs.

IV. THE PSYCHOLOGICAL ROLE OF THE TEACHER IN THE CLASSROOM

The emotional climate of the classroom is determined by the interaction of the teacher and the children he teaches. The teacher's responses to the overt behavior manifested in his classroom forces him into many psychological roles during the school day. Some of the psychological roles discussed by Redl and Wattenberg are listed below.[22]

1. As representatives of society, teachers attempt to inculcate in children the values of the community. These include moral attitudes, thinking patterns, and life goals.

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[21] Reichard, op. cit., pp. 67-68.

[22] Fritz Redl and William W. Wattenberg, Mental Hygiene in Teaching, Second Edition (New York: Harcourt, Brace and Co., 1959), pp. 299-302.

2. Teachers act as judgers and screeners in their marking systems, report cards, promotion schemes, and the day-to-day work of conducting class sessions and correcting papers.
3. As a source of knowledge, teachers are expected to be living textbooks from which one can get information.
4. Teachers are helpers in the learning process where there is difficulty. They ask leading questions, go over problems step-by-step, and conduct discussions.
5. As a referee, every teacher is expected to be a Solomon. He is judged by his ability to be fair and to help children reconcile their differences.
6. Psychologically, some children may use the teacher as a respected person with whom they identify themselves.
7. The teacher is a temporiser of anxiety. Confidence, competence, and humor can help to reduce anxiety in children. Stern threats, rigid severity, fear of failure, and disapproval can increase anxiety.
8. The teacher will be an ego-supporter for many children when he helps them muster their courage and gives them reassurance.
9. As a group leader, the teacher sets the tone of the class, and helps the group function harmoniously in reaching group goals.

Some of these roles can be more adequately met by teachers of minority groups if they understand the cultural backgrounds of the children in their classes. There may be serious conflicts between values held by parents and teacher. While a teacher may teach children certain values which their parents do not hold, he should not teach young children that their parents have wrong values. For example, from the teacher's point of view, the

Indian's religion may not be rational, scientific, or philosophically sound. Indian mythology, unlike its Christian counterpart, is accepted literally rather than allegorically. The teacher's belief that there is a scientific explanation for all natural phenomena is juxtaposed to the unscientific ritualism of Indian cultures where witches, not germs, bring sickness.

A teacher may find that discipline patterns in a child's home differ from those of his own childhood. Shame and fear are often effective controls within the family. The bogey-man is a reality for the Indian child, but not the hickory stick. Coming from a culture where conformity and anonymity are primary values, children are apt not to seek to be different or individual. Few Indian children may wish to demonstrate that they are the best readers or spellers in the class.

Teachers report that children from Spanish American and Anglo homes watch closely when a dispute involves one Anglo child and one Spanish American child to see if the teacher is completely fair in making a settlement. The teacher is apt to be accepted in relation to the degree of fairness which the group feels he exercises.

The understanding teacher will see many opportunities in school to nurture ego-needs of children. Specific ways of doing this for Indian children or Spanish American children will not always follow the patterns the teacher himself experienced. The Indian child who never lets his eyes meet his teacher's when responding to him, but who hangs his head shyly, must learn that this is a custom unfamiliar to many of his teachers. The way in which attempts are made to change children's behavior will determine, to a great extent, the teacher's success. Children who come to school from homes where authoritarian practices are in vogue will need more security in learning to operate in a free classroom atmosphere where children plan with the teacher, where children's suggestions can be important, and where children may even disagree with the teacher in acceptable ways.

Perhaps a new system of motivations is indicated. It was not within the province of this study, however, to determine what these motivations should be.

V. WAYS TEACHERS BRING ABOUT UNDERSTANDING AND ACCEPTANCE

Rasey has written that "enlightened self-interest alone dictates that each of us go about his highly crucial teacher business, a more important business than we have realized."[23] Rasey says that we probably "do not teach"; rather, "we cause to learn."[24] Developing an enlightened self-interest may be the most important task of the teacher in achieving maturity both as a teacher and as a participating citizen.

Most teachers everywhere come in contact with some children who have had an upbringing very different from their own. These differences may stem from social class, cultural background, or living habits of the parents. It is a part of enlightened self-interest to attempt to understand and accept differences. This can be done without surrendering one's own values. "Differences in moral codes, different standards of cleanliness, and different social customs may be troublesome to many fine people."[25]

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[23] Marie I. Rasey, editor, The Nature of Being Human (Detroit: The Wayne University Press, 1958), p. 107.

[24] Ibid., p. 107.

[25] Redl and Wattenberg, op. cit., p. 491.

Some suggestions for bringing about understanding and acceptance follow.

1. Teachers can develop greater "self-awareness." The better an understanding an individual has of himself, the better he is able to be objective about his own problems: to know which ones he can solve, which ones he cannot, and where he can get further help. During one of the visits to schools, the staff of the Indian Research Study talked with a teacher in a one-teacher school in a rural community. The teacher listened while the director of the research staff explained the purpose in defining the cultural differences and the need for greater appreciation for and acceptance of cultural differences. This teacher said, "You can call it cultural difference if you want to, but I've taught here for eight years, and I can tell you they act darn funny." It would seem that in eight years, the teacher might have evidenced some curiosity about why the people acted the way they did!

2. Teachers can pursue any one of many avenues to adult education or supplementary interests. One way to accomplish this is to enroll at a university for courses that will help in meeting problems in teaching. Another way to accomplish this need is by wise selection of a reading program without such university enrollment. A third approach to adult education is to develop interests in courses such as ceramics, jewelry making, woodworking, typing, bridge, piano playing, golf, or any other avocational interest. A fourth approach is to plan carefully for and to use free vacation periods for educational travel, for working at some job unrelated to teaching, or for cultivating friends in other kinds of work.

3. Teachers can become more objective in evaluating their work. This includes evaluating dissatisfactions, seeking help with specific problems, talking out situations with confidants who are good listeners, recognizing

possibilities in working toward advancement in the profession, and accepting the role of the teacher in the community as one of setting an example.

4. Teachers can demonstrate their acceptance of what fellow citizens hold valuable. Rapport with community leaders is important. However, conformity need not mean abandonment of one's individuality.

5. Teachers need not allow themselves to be "taken in" by the dichotomy of "either-or-ness" in such statements as "I teach children, not textbooks," or "I have and expect to uphold subject-matter standards." Teachers who have their thinking fixed on rigid subject-matter standards are sure to be frustrated by children who do not achieve to those expectations. In a teaching situation in which the culture, language, and experience barriers cause many children to be ill-prepared for work offered at fixed grade placement, they have to be taught at whatever level of academic achievement they are able to function successfully. This does not mean that teachers teach children, not textbooks. It should mean that they use materials of instruction to teach children the knowledges and skills that are appropriate for them.

CHAPTER III

CONFLICTING VALUES: TEACHER AND CHILD

I. INTRODUCTION

As has been presented in Chapter II, most teachers in the public schools possess and have internalized middle-class values. That is, teachers come from homes where individual successes are highly rewarded and parents emphasize "climbing the ladder of success." Value is imputed to hard work and to meticulous planning for the future. Children learn many axioms about life in general as they grow up, such as: "If at first you don't succeed, try, try again." "The elevator to success is not running, climb the stairs." "Never put off until tomorrow what you can do today." "Success is won by hard work."

The Indian child comes to the classroom with a set of values and a background of experience radically different from those of his teacher. The teacher needs to be cognizant of these differences, to attempt to understand them, and, perhaps most important, to respect ideas, values, and practices which are different from his own.

How does one get the values he lives by?

Kluckhohn says that there are certain generic problems common to all human groups. They center about one's orientation to himself, his orientation to other people, and his orientation to the world about him.[1]

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[1] Florence Rockwood Kluckhohn, "A Method of Eliciting Value Orientations," Anthropological Linguistics, 2:4, February, 1960, No. 2 (Bloomington: Anthropology Department, Indiana University).

Kluckhohn illustrates man's relation to nature in three ethnic groups in the Southwest.

> Spanish-American culture in the American Southwest, or Mexican culture for that matter, gives us an example of a very definite first order Subjugation-to-Nature orientation. The typical Spanish-American sheep herder, in a time as recent as twenty-five years ago, believed firmly that there was little or nothing a man could do to save or protect either land or flocks when damaging storms descended upon them. He simply accepted the inevitable. In Spanish-American attitudes toward illness and death, one finds the same fatalism. "If it is the Lord's will that I die, I shall die," is the way they express it, and many a Spanish-American has been known to refuse the services of a doctor because of this attitude.[2]
>
> If the dominant conceptualization of the man-nature relationship is that of Harmony-with-Nature, there is no real separation between man, nature, and supernature. One is simply an extension of the other and the conception of wholeness derives from their unity. This orientation seems to have been the dominant one in many periods of Chinese history, and it is strongly evident in Japanese culture at the present time, as well as historically. It is also the orientation attributed to the Navajo Indians by Clyde Kluckhohn.[3]
>
> The Mastery-over-Nature position is the first order one (sic) of most middle-class Americans. Natural forces of all kinds are to be overcome and put to the use of human beings. Rivers everywhere are spanned with bridges; mountains have roads put through and around them; new lakes are built, sometimes in the heart of deserts; old lakes get partially filled in when additional land is needed for building sites, roads, or airports; the belief in man-made medical care for the control of illness and the lengthening of life is strong to the extreme; and all are told early in life that "the Lord helps those who help themselves." The view in general is that it is a part of man's duty to overcome obstacles, hence great emphasis upon technology.[4]

While the Anglo believes that nature will destroy him unless he prevents it, the Navajo believes that nature will take care of him if he behaves as he should and does as she directs.[5]

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[2] *Ibid.*, p. 4 [3] *Ibid.*, p. 5 [4] *Ibid.*, p. 5.

[5] Clyde Kluckhohn and Dorothea Leighton, *The Navajo* (Cambridge: Harvard University Press, 1946), pp. 227-228.

The Anglo is apt to believe that "nature is a malignant force with useful aspects that must be harnessed, and useless, harmful ones that must be shorn of their power. . . ."[6] The Navajo is apt to believe "if anything is wrong these days, it is because The People are forgetting their ways and their stories, so of course anyone would know that there would be hard times. It has nothing to do with too many sheep."[7]

II. BASIC INSTITUTIONS IN SOCIETY

There are certain basic institutions in all societies. These institutions are: (1) religion, (2) the family, (3) education, (4) economics, (5) health, (6) government and politics, and (7) recreation. These institutions evolve and have permanence in a society because its members adhere to certain goals in life. Children are taught specific practices to insure that they will achieve these goals. These institutions become fixed because certain behavioral patterns establish and reinforce themselves in the social expectations of the total group. The institutions reflect, then, the values of the total society. These values, in turn, through sanction and rejection, keep the total group oriented toward the life goals of the group. This is depicted graphically in Figure 2 on the following page.

Behavior in society is observable only in individual behavior. However, individual behavior incorporates specific practices of a culture which each individual selects for himself. Unless he conforms to the dictates of the group, he will be a "non-conformist." Pressures to conform cause most people to align themselves with the social expectations of the total group.

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[6] _Ibid._, p. 227.

[7] _Ibid._, p. 228.

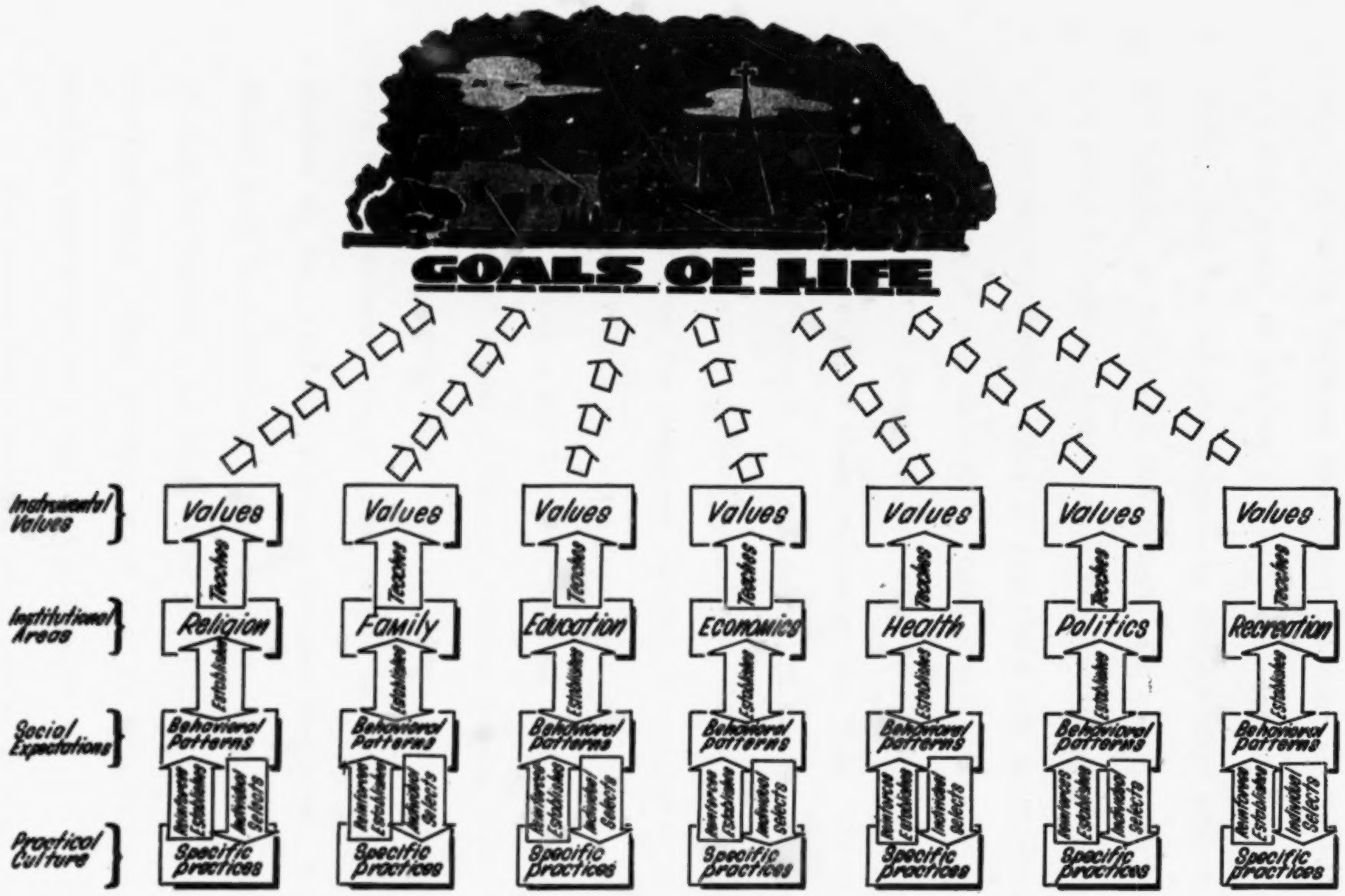
GOALS OF LIFE
Instrumental Values
Institutional Areas
Social Expectations
Practical Culture
Values
Teaches
Religion
Family
Education
Economics
Health
Politics
Recreation
Establishes
Behavioral Patterns
Reinforces Establishes
Individual Selects
Specific practices

Chart developed by Horacio Ulibarri—Drawn by LeRoy Condie

Figure 2

BEHAVIOR IN SOCIETY. This chart is to be read as follows (beginning at the bottom): **Specific practices** refers to individual behavior. When many individuals adopt a specific practice, a group **behavior pattern** emerges. It will be noted that there is a reciprocal relationship between **specific practices** and **behavior patterns.** While specific practices combine to create behavior patterns, the behavior patterns, in turn, are followed selectively by the individual. He may choose to practice some kinds of behavior, reject others. In time behavior patterns assume a permanent quality. They then become **institutions.** Institutions reflect the group's **values.** The values - - - what is valued - - - orient the group, and the individual, toward the **goals of life.**

This goal-of-life pattern may be easily illustrated by certain social expectations within the institution of religion. As discussed in Chapter II, Judeo-Christian teaching has given the dominant American society specific dogma in order to achieve the life goal--eternal life. Most people, even though they may not participate in the specific practice of regular church attendance, do reinforce the established behavior patterns of the Judeo-Christian religion. Most people are familiar with segments of American culture in which many specific practices are considered to be extremely conservative or puritanical. "Card playing is sinful," "dancing is sinful," or "it is wrong to play ball on Sunday" are examples. The majority of people conformed to these values at one time. If what has happened to some of these practices is considered, it can be seen that culture is an ever-changing entity. Some individuals began to question the social norm and deviated from the accepted specific practices by doing what they really wanted to do. Thirty to forty years ago when young women began wearing short hair, it was a bit forward, perhaps, but they did it anyway. After most of them had accepted the practice of having their hair cut short, it was considered appropriate to do so. Thus, it is evident that as more and more people become liberal with respect to a specific practice, the liberal, instead of the original, practice becomes the norm. This evolutionary change goes on constantly in our society. The Anglo-American culture changes so rapidly that each older generation feels that the younger is too revolutionary. This perhaps gives rise to such trite sayings as "the younger generation is going to the dogs."

The social behavior of a group may be studied, then, by observing the individual practices in the basic institutions. People are apt to believe that their practices and beliefs are right and, so, the practices and beliefs of the other person are wrong. People tend to deprecate the practices of others. It is "bad" to fail to do that which is "good." Stereotypes are created in this way. People with limited sophistication in social practices of others tend to say that all people of a given society behave in the same way. A few stereotypes might be mentioned. Many teachers say "All Indians are good artists," "Spanish Americans and Indians are lazy," or "He is getting along very well for a Navajo."

Teachers should be aware of stereotyping. Knowing as we do that people of any ethnic group will find their aptitudes and abilities spread along a long continuum from excellent ability to average ability to poor ability, it seems only logical that the range of ability to do art work in a large group of Indians will fall on the same continuum. It is no more logical to believe that all Indians are creative artists than to believe that all blind persons have aptitude in music.[8]

It is recognized that whole classes of Indian boys and girls who lack language ability and reading skills may perform in art class better on the average than whole classes of non-Indian boys and girls. They may compensate for their lack of certain skills in the classroom by developing others. They may also have more highly developed powers of observation and ability to portray what they have seen because of a very different background of experience.

Surely no one who has visited the large mission churches in the Rio Grande Valley, or more specifically, the beautiful church at Acoma, has concluded that Spanish Americans or Indians were, by nature, lazy. Their survival in the arid Southwest with an agrarian economy further attests to industry and hard work.

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[8] This is a stereotype that has existed in the past. All blind boys in state schools were believed to be potential piano tuners, and many piano practice rooms were made available to the enrollees in such institutions.

If one expects just to accept the statement that a student does very well for a Navajo, this is an upsetting generalization. If it means that his language, culture, and experience barriers are recognized as they exist while one works diligently to overcome them, this is probably acceptance of reality. No longer is performance of a Navajo adequate until he does well as an American citizen in the larger society. To accept him as "just a Navajo" is both condescending and unfair.

The cultural difference may also be illustrated by the contrast in the homes of the Indian and the Anglo American. The Anglo likes for his house to have many rooms. There is undoubtedly a direct parallel between the high and low economic status of families and the number of rooms in their houses. Anglos like to have many separate rooms for food preparation, eating, resting, and sleeping. Not so the Southwest Indian. He likes a closely knit, harmonious group about him. Having all of the family together in one room has a value for him. He sees no need for putting each one in his separate room. To indicate the persistence of this cultural trait, one might cite the instances in which families have been pressured into accepting Anglicized frame houses, but used them for storehouses and built themselves their traditional home nearby. This is further illustrated in the relocation program where the nuclear family is relocated in an apartment or house of four or five rooms in a distant city. Members of the extended family may move in with the relocated family because there is plenty of room. However, the neighbors and landlord are apt to register complaints. The Indian may not understand the complaint at all since "his way" is the way he prefers his living arrangement.[9]

The cultural difference as it exists in the Indian groups will be apparent also in the attitude of the child toward the figure of authority. A child who comes to school from a home that tends to be autocratic will be unable to participate easily in a classroom that tends to be democratic. Even after he begins to understand the process, he is still in conflict because of the basic difference in trying, on the one hand, to be an independent, thinking individual, and trying, on the other hand, to be obedient to authority. The nature of the government of a pueblo group, for example, is theocratic, tending more toward autocracy than democracy. Theocracy is the government of a state by the immediate direction of God.[10] The priests, who represent the Deity, govern.

III. THE CONCEPT OF LIFE-SPACE

When the Spanish American or Indian child comes to public school in New Mexico, he is apt to have a meager background of experience which will make it difficult for him to participate meaningfully in the formal work of the classroom. Havighurst and Neugarten use the concept of life-space in delineating the total environment in which the child lives.[11] The concept of life-space "involves at least three different elements:

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[9] Robert Young, Lecture to Teachers, June 13, 1958.

[10] Webster's New Collegiate Dictionary (Springfield, Mass.: G. C. Merriam Co., Publishers, 1953), p. 881.

[11] Robert J. Havighurst and Bernice L. Neugarten, Society and Education (Boston: Allyn and Bacon, Inc., 1957), p. 158.

physical space, the objects contained within that space, and the people who inhabit that space. All three elements are socially defined or socially determined."[12]

There are extreme differences in the experiences of middle-class Anglo children. This has been clearly demonstrated, for example, in classrooms when various individuals describe a range of travel experiences of their families.[13] Other children in any teacher's classroom will have had most meager out-of-school experiences. It is difficult for the teacher to make reading experiences equally meaningful for the two children at opposite extremes of the wide range of first-hand experiences.

> The school needs to perform the dual function of enlarging the child's life-space and of helping him feel secure in that life-space. To do this, the school must provide a rich curriculum and a psychological atmosphere that lends itself to cultivating happiness and security within the child. . . . It is important for the teacher at least to know that the life-space does have different meanings for different children and to know something of the nature of these meanings.[14]

The life-space of the child is one of the most significant factors determining the school's success in teaching him the values which he must acquire. The meager background of experience, the lack of familiarity with artifacts in Anglo culture, the use of a second language in his life outside the school, the complete absence of books, magazines, and newspapers in the child's home and in the experience of his elders create many problems in the administration of a school. Teachers must attempt to overcome these problems and at the same time transmit the heritage of the people from both cultures.

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[12] Ibid., p. 159.

[13] Glenn O. Blough and Allan L. Dodd discuss the extensive first-hand travel experiences of an urban sixth-grade class in their article, "Children Are Their Own Resources," Childhood Education, 34:21-24, September, 1957.

[14] Havighurst and Neugarten, op. cit., pp. 172-173.

IV. THE MATRILINEAL VERSUS THE PATRILINEAL SOCIETY

The matrilineal society is one that reckons descent, inheritance, or succession exclusively or preferentially through females. This matrilineal organization exists in many less complex societies. Women, in matrilineal societies, own the houses, rear the children with help from maternal uncles more than from the father figure, and exercise control over the provision of the necessities of life for the family. According to Adair, "matrilineal clans and matrilocal residence are still basic to the social organization of the Zuni pueblo, and have been instrumental in the perpetuation of the Zuni culture."[15] Women control a considerable share of the wealth, they have a stronger economic position in the pueblo than they had twenty to thirty years ago, and they operate in the trade of the community independent of the men.[16]

This existence of a matrilineal society presents a real barrier to the acculturation of the Indian toward middle-class Anglo life-style. In middle-class Anglo culture, each man hopes eventually to own his own house and to acquire other worldly possessions. As already mentioned, money is a highly prized middle-class value. The matrilineal society does not include this within its province. Traditionally, a man was easily sent back to his mother's household by his present wife. Thus, Zuni men are apt to covet possessions only with respect to their life values of order, balance, and harmony with the cosmos. Some possessions have great value in participation in religious rites and ceremonials and in the acquiring of social status and prestige. But, possessions are not apt to be selfishly coveted in the economic sense of the Anglo. A Zuni man, for example, may work extra hard with his crops, or save his money carefully for a period of time in preparation for sponsoring a Shalako house.

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[15] John J. Adair, "A Study of Culture Resistance: The Veterans of World War II at Zuni Pueblo" (unpublished Doctoral dissertation, The University of New Mexico, Albuquerque, 1948), p. 163.

[16] Ibid.

The extent to which families adhere to the traditional matrilineal family organization varies from one family to another within each Indian group. It is probably safe to say that members of many Indian families do share the responsibility for family decisions. In this sense, while Anglo society is legally a patrilineal one, the arriving at decisions within the family today may be much the same for Indians or Anglos.

It needs to be emphasized that while much day-to-day living in Anglo society suggests that the mother in the family has assumed much responsibility for important decision making, the father is still legally the head of the house. One writer has recently suggested that "the American family is losing, has lost, its patriarchal pattern, and is becoming matriarchoid in character."[17] Yet in the courts, it is recognized that family possessions are owned by the husband. A specific illustration will indicate the extent to which this is true. If a husband dies without a will and the bank account of the family is in his name, the wife is unable to obtain any of the money until the estate is settled. Many families who did not know this have undergone inconveniences because they were not informed.

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[17] Iago Gladston, "The American Family in Crisis," Mental Hygiene, 42:230, April, 1958.

V. EXTENDED AND NUCLEAR FAMILIES

Important differences exist between the extended family and the nuclear family. Traditionally, in both the Spanish American and Indian cultures, the extended family has been dominant. An extended family consists of the several related individual families, especially those of a man and his sons or of a woman and her daughters, residing in a single large dwelling or a cluster of smaller ones. This is typically found in some Indian and Spanish American families in which the grandmother or grandfather acts as the matriarch or patriarch,and the children and all the grandchildren live either with the grandparents or nearby. This is illustrated in a Spanish American family where the old patriarch lives in his house in one section of the city and his several children all live in a cluster of houses around him. Every morning each one comes past and drinks a bit of coffee and wishes him well. He no longer is gainfully employed, but his children are delighted to see that he is provided for as well as they are able. All the grandchildren grace his doorstep, and these numerous progeny contribute to the happiness he sees in his immortality.

Concerning the Spanish American family in isolated rural communities today, Maestas says that:

> For the most part, the family is a closely knit social unit which extends beyond father, mother, and children. It includes grandparents, uncles, and sometimes cousins. There is, however, evidence that the size of the family is shrinking and family ties are weakening. There is strong parental control over children, and one seldom hears about juvenile delinquency. Even after the youth have married and have established their own homes, family loyalty and solidarity are still strong.[18]

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[18] Sigfredo Maestas, "Life Styles of Lower-Class People and Their Motivational Structure" (unpublished graduate paper, The University of New Mexico, Albuquerque, 1958).

Some of the advantages of the extended family organization can be readily seen in the mutual helpfulness of various members of related families in time of any need. Sharing of food with those sub-groups whose supply is exhausted, sharing the work of the total family during the seasons of the year when all work efficiently together, and sharing problems related to health and well-being are examples of this mutual helpfulness.

Reichard illustrates the practice among the Navajo of sharing with those in need.

> Perhaps when the work on American Indian ethics is written, it will be necessary to dissociate food and sustenance from wealth subject to barter, and perhaps kinship will have to be substituted for material exchange, since relatives may pay in service and kindness rather than in materials. Whatever the classification, the Navajo deplores refusal to share food--it is the greatest sin, the offense that reduces a person to the lowest rung of the ladder in the eyes of his fellowmen.
>
> During the winter of 1932-33 I saw three apparently respectable persons collapse on the street in the more complaisant residential districts of New York City. Subsequent newspaper notices reported the deaths as due to starvation. The next summer, to emphasize the severity of the depression, I mentioned these cases to my friend, Marie. Indignantly she asked, "But there were people who had food, weren't there?" And throughout the summer, trying to comprehend the circumstance, she repeatedly reverted to our talk, "I can't see why those women died, if there were people who had enough to eat." When this question can be answered satisfactorily more souls will be saved.[19]

The advantage of the extended family is further observed in the mutual helpfulness in meeting problems of exceptionality within the group. Institutions for the mentally retarded, for the aged, and for the mentally ill were neither founded nor acceptable as long as the extended family could provide care for all these individuals. An aunt, a grandmother, an older sister, or some other member of the group was available to care for the atypical.

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[19] Gladys Reichard, "The Navajo and Christianity," The American Anthropologist, 51:69, January-March, 1949.

In writing of the Mexican American population of Sal si Puedes, Clark says:

> Barrio residents criticize young people who do not provide homes for their aged parents. Mexican-American people are generally horrified at the common American practice of sending aged relatives to sanitariums or nursing homes when they become ill or senile. Teresa advanced the theory that "when a person gets very old and has to have someone to take care of him, it is better for him to be at home with his family than in a hospital among strangers. When someone gets old, he may act a little crazy, and he needs his family with him to understand him and help him. In a hospital or a sanitarium he would only feel worse because he would think that everybody had deserted him." Elvira worked for several months as a practical nurse at a private nursing home for the aged. She reported, "Almost all the patients are old American ladies who are a little crazy. There are about twenty of them there, and only three or four have regular visitors. Others are visited by their families only once a week or even less. I think that is just terrible. They are such nice old people and they are completely neglected by their families. Their relatives just stick them in the hospital and forget about them. They could be taken care of at home just as well and would be much happier with their children and grandchildren. A few are too sick to be at home, but the least their relatives could do is to visit them regularly; someone should come every day."[20]

It is recognized that the extended family existed to a considerable degree during previous decades in other parts of the country. The middle-class values of striving for achievement and success, planning for the future, and the belief that one shapes his own destiny tend to de-emphasize the community family welfare. Further, the mobility of families, the scattering of immediate families to all parts of the country, the specialization of work, and the mechanization of daily living reward the efficiency-apartment existence of the nuclear family.

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[20] Margaret Clark, Health in the Mexican-American Culture, A Community Study (Berkeley: University of California Press, 1959), pp. 145-146.

The importance of and the values inherent in the extended family need to be appreciated by the Anglo American who has known only the nuclear family in his own experience. The extended family as an institution tempers one's attitudes toward illegitimacy, the care of the mentally and physically handicapped in the family, and the need for social welfare as a government agency.

VI. CONFLICTS IN VALUES

Each child coming to the public schools of New Mexico is expected to become oriented to certain values emphasized in the dominant culture. Some of these values are:

1. He must place a value on competitive achievement and climbing the ladder of success.
2. He must learn time orientation that will be precise to the hour and minute, and he must also learn to place high value on looking to the future.
3. He must accept the teachers' reiteration that there is scientific explanation for all natural phenomena.
4. He must become accustomed to change and must anticipate change. (The middle-class Anglo culture teaches that "change," in and of itself, is good and desirable!)
5. He must "trade" his shy, quiet, reserved, conforming, and anonymous behavior for socially approved aggressive, competitive behavior.

6. He must somehow be brought to understand that he can, with some independence, shape his own destiny, as opposed to the tradition of remaining an anonymous member of his society.[21]

Too many teachers are inadequately prepared to understand or accept the dissimilar cultural values. The values of most teachers are middle-class. This means that teachers come from homes where the drive for achievement causes parents to "push" their children to climb the ladder of success; where "work for work's sake" is rewarded; and where emphasis is placed on building for the future.

The Indian child comes to the classroom with a set of values and a background of experience radically different from those of the average Anglo child. To teach the Indian child successfully, the teacher must be cognizant of these differences and must above all else seek to understand, without disparagement, these ideas, values, and practices different from his own.

Table I summarizes many conflicts in values between the traditional Indian or Spanish American child and his middle-class Anglo teacher.

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[21] Material in Chapters II and III is based upon four monographs prepared during the Indian Research Study which have reviewed literature and made observations concerning the cultural differences:

Le Roy Condie, "The Effect of Cultural Difference in the Education of Navajo Indians," September, 1958. (Mimeographed.)

Edward A. Marinsek, "The Effect of Cultural Difference in the Education of Apache Indians," January, 1960. (Mimeographed.)

Edward A. Marinsek, "The Effect of Cultural Difference in the Education of Pueblo Indians," September, 1958. (Mimeographed.)

Horacio Ulibarri, "The Effect of Cultural Difference in the Education of Spanish Americans," September, 1958. (Mimeographed.)

TABLE I

CONFLICTS IN CULTURAL VALUES

American school teachers are sure to place great value on these practices.	Children from traditional Indian families may be said to have accepted general patterns as described below.	Children from traditional Spanish American families may be said to have accepted these general patterns.
Mastery over Nature. Man must harness and cause the forces of nature to work for him.	Harmony with Nature. Nature will provide for man if he will behave as he should and obey nature's laws.	Subjugation to Nature. An often observed reaction in the traditional Spanish-American was, "If it's God's will."
Future time orientation. All living in our society is future oriented.	Present time orientation. Life is concerned with the here and now. Accepting nature in its seasons, we will get through the years, one at a time. "If the things I am doing now are good, to be doing these same things all my life will be good."	Present time orientation.For the traditional Spanish American family, the only important goal of life was going to heaven after death. One only passed through this temporal life to receive his "reward" in the next.
Level of aspiration.Climb the ladder of success. Success is measured by a wide range of superlatives: first, the most, the best, etc.	Level of aspiration. Follow in the ways of the old people. Young people keep quiet because they lack maturity and experience. This de-emphasizes experiment, innovation, and change.	Level of aspiration. "To work a little, rest a little." Follow in one's father's foot steps. Be satisfied with the present.
Work. Success will be achieved by hard work.	Work. One should work to satisfy present needs.Accumulating more than one needs could be construed as selfish, stingy,or bigoted.	Work. Work to satisfy present need. The Spanish American was particularistic in nature. He operated on emotional response rather than subordinating the individual to the societal institution. A businessman looks first at himself as a brother to the man who is asking for credit, and secondly as a business man who is dealing with a customer.
Saving. Everybody should save for the future. "A penny saved is a penny earned." "Put something away for a rainy day." "Take care of the pennies and the dollars will take care of themselves."	Sharing. One shares freely what he has. One of the traditional purposes of the Shalako was that a man could rather anonymously,provide a ceremonial feast for the village if he were able to do so.	Sharing. Traditional pattern included sharing within the extended family group. In cultural transition, Spanish Americans suffered considerable economic poverty. Those established in the dominant culture accepted Anglo values in sharing.

TABLE I (continued)

American school teachers are sure to place great value on these practices.	Children from traditional Indian families may be said to have accepted general patterns as described below.	Children from traditional Spanish American families may be said to have accepted these general patterns.
Adherence to time schedules. "Take care of the minutes and the hours will take care of themselves." In practice, we have become so enslaved to time schedules, we might be termed "clock watchers."	Adherence to time schedules. Time is always with us. The unhurried inexactness of the Indian with appointments has led to the expression, "He operates on Indian time."	Adherence to time schedules. The expression for "the clock runs" translated from the Spanish is "the clock walks." It has been said that this explains the "mañana attitude" which Anglos have observed in Spanish Americans.
Acceptance of change. Change, in and of itself, is accepted as modal behavior.	Reaction to change. We may follow in the old ways with confidence.	Reaction to change. We may follow in the old ways with confidence. The reason may not be at all the same as the Indian's however. This life on earth is endured only to win eternal life in Heaven.
Scientific explanation for all behavior. Nothing happens contrary to natural law. There is a scientific explanation for everything.	Non-scientific explanation for natural phenomena. Mythology, fear of the supernatural, witches, and sorcery may be used to explain behavior.	Non-scientific explanation for natural phenomena. Witches, fears, and non-scientific medical practices were used to explain behavior.
Competition. Aggression. One competes to win. Winning first prize all the time is a coveted goal.	Cooperation. Remaining submerged within the group. Traditionally, a man did not overtly seek offices of leadership or attempt to dominate his people. In sports, if one won once, he was ready to let others win.	Humility. Acceptance of the status quo. Submission, might categorize behavior.
Individuality. Each individual shapes his own destiny. Self-realization for each person is limited only by his capacities to achieve.	Anonymity. Accepting group sanctions, "sinking" the individual in the group, and keeping life rigidly routinized, all these place primary emphasis on conformity.	Obedience. The Catholic Church kept life routinized, placed emphasis on obedience to the will of God.

CHAPTER IV

THE ACCULTURATION PROCESS

I. WHY ACCULTURATE?

The interaction of cultural groups in New Mexico leads inevitably toward more and more people in the minority groups taking their places in the social and economic life of the state. The dominant group controls the economic base, the public health program, and the educational program. Yet, these institutions offer to the minority groups opportunities for acquiring desired artifacts for present-day living. The problem involves the adaptation of many individuals to new types of living.

The pressures toward progress and the ability to function in a highly technological age make necessary the transition of minority groups to an economy where they can participate in the American way of life. For example, in order to compete successfully in the labor market, these individuals must not only have acquired the technical skills needed in order to function on a job, but they must also speak the language of their co-workers and practice the social amenities of middle-class culture. Only in this way can they participate in all the activities of the people with whom they work. People are as apt to lose their jobs because they do not know the language and social practices as they are because they do not know the skills required on the job.

II. A SCALE OF ACCULTURATION

The interaction of two social groups in the course of time necessitates a certain amount of exchange of ideas, attitudes, and practices. The degree to which the exchange causes either group to accept and internalize attitudes and practices of the other, cultural diffusion is said to take place. The present research study was entitled "Adjustment of Indian and Non-Indian Children in the Public Schools of New Mexico" to connote the desirability of mutual readiness for integration in the public schools and to indicate that both cultures have values to contribute to this amalgamation.

However, the acculturation process that is taking place is predominantly one of movement of minority ethnic groups into the dominant middle-class Anglo culture. For Indian groups and the Spanish American people, this represents a significant evolutionary cultural change from life in a traditional agrarian state.

That no definite statement can be made about any total group in transition needs to be emphasized. Within each group one finds a few who are entirely bicultural and who live equally as acceptably in one culture as another; there are a few who have rejected their traditional culture and who attempt to live entirely as having accepted all Anglo values; there are those in transition who attempt to live confidently in the traditional culture but who are accepting many of the artifacts and the need for the money economy of the dominant culture; and there are those who continue to reject the intruding Anglo culture and retain the "old ways."

A scale of acculturation for the Spanish American culture of the middle Rio Grande Valley depicts the levels of traditional, low, medium, high, and complete acculturation for each of the seven institutional areas discussed in Chapter III.

While the scale of acculturation presented in Table II details the Spanish American situation, it serves to illustrate the process for all minority groups.

III. ECONOMY

The extension of the opportunities to the minority groups in New Mexico to acquire wages has brought about a complete revolution within some of the villages near cities. There is a trend, at present, for all the able-bodied members of a family to leave their young children with grandparents from early morning until late at night so they can commute to a near-by city to perform menial jobs for which they are paid wages. One informant indicated that in one pueblo almost all of the employable adults are doing this. There is concern that this will increase social disorganization within families with concomitant neglect and abandonment of children, which would lead to an increase in juvenile delinquency.

The Indians have been accustomed to a quite different economic base. On tax-free land, with homes rent-free, they have been able to provide the necessities of life with irrigated gardens and small trade in pottery, jewelry, and tourist trinkets. They have always contented themselves with an existence in which money had little value. The change has brought automobiles to the pueblos, better roads, longer shopping trips, and television. Once people assimilate these artifacts in their daily lives, they are unwilling to give them up.

TABLE II

SCALE OF ACCULTURATION: SPANISH AMERICAN TO ANGLO

	TRADITIONAL	LOW	MEDIUM	HIGH	FULL
Religion	Usually Catholic; Life Hereafter (Blind faith)	Usually Catholic; Life Hereafter (Blind faith)	Catholic, some Protestant; Life Hereafter (More enlightened faith)	Catholic or Protestant Rational faith or weak church goers.	Catholic or Protestant; Rational faith
Family	Extended family concept; large families; autocratic	Extended family; medium-sized; autocratic	Little extension to family; medium-sized; Less autocratic	Little extension to family; medium-sized; paternalistic.	No extension to family concept; small or medium; paternalistic or democratic
Education	Barely literate or illiterate; ruling class refined and polished.	Speak English brokenly; elementary school; blind faith in education.	Both parents speak English; elementary & probably high school; some value in education	Parent(s) college education; professional; middle-class value to education.	Has lost contact with Spanish culture.
Economics	Agrarian; subsistence level; welfare.	Own plot of land; unskilled labor; subsistence level of income; welfare.	Farm; semi-skilled labor; teacher; low average income.	Professional; average or above average income; rise to middle class.	Has lost contact with Spanish culture.
Health	Folkway; herb medicine; superstition.	Folkway; patent medicines; little professional medical attention.	Some folkway; more professional medicine and attention; hospitalization.	Medical attention; hospitalization; modern sanitary facilities.	Has lost contact with Spanish culture.
Politics	Lower class: uninterested or recreational Middle class: non-existent. Upper class: sharp politicians.	Lower: uninterested or local(recreation) Middle: non-existent Upper: sharp politician (political boss).	Lower: uninterested Middle: value in franchise; local political boss. Upper: state political boss.	Lower: uninterested Middle: value in franchise; local political boss. Upper: state political boss.	Indifferent
Recreation	Family recreation; communal; non-commercial	Family recreation; communal; some commercial	Little family recreation; non-communal; commercial	Very little family recreation; non-communal; mostly commercial.	Has lost contact with Spanish culture.

Thus, the unhappy truth is that the economy is the controlling element in present-day social interaction. In order to coordinate the total pattern of living for the welfare of the total society, the other basic institutions have to modify their operation to fit with the economy. In order for the individual members to have more of the artifacts of the dominant Anglo culture, the Pueblo, the Apache, the Navajo, and the Spanish American must adjust to the economic base--with its weekly wages and installment buying--that the enterprising business world extends to them. The survival of the sub-cultures probably hinges on their acceptance of the new economy. Other institutions within the sub-cultures will, of necessity, adjust to the economic change. Accepting modern health practices and the education of the young children are closely allied with the economic base of the people.

Many people recognize values in the traditional practices of the sub-cultures and feel strongly nostalgic about preserving such practices as the extended family with its congenial care of the aged and the handicapped, the security of agrarian self-sufficiency, the absence of ulcers and heart attacks among people with a slower tempo of living, and the festivals that preserve the folkways and the music, art, and dance of the social group.

Progress in our social order dictates that change is inevitable.

IV. HEALTH

Bringing better health practices to the rural Indian is essential to the acculturation process. There is increasing acceptance among the Indian population of the best available medical practices. As a matter of principle, as long as scientific knowledge is available to reduce death, information and guidance must be made available to all people to make it possible for them, through enlightened self-interest, to seek the best medical care. The establishment of hospitals throughout Indian country and the development of clinics accessible to individual families make medical services directly available to the people.

Adair cites statistics of the United States Public Health Service in the following table to show the high mortality rates among the Navajo Indians.[1]

TABLE III

LEADING CAUSES OF DEATH AMONG NAVAJOS AND COMPARATIVE U.S. GENERAL POPULATION RATES, 1954

Causes	Rates per 100,000		Per cent of total deaths	
	Navajos	U.S. General	Navajos	U.S. General
Pneumonia	123.5	23.7	16.2	2.6
Gastritis, Duodenitis, Enteritis, Colitis	110.2	5.3	14.5	.6
Diseases of early infancy	102.3	39.4	13.4	4.3
Tuberculosis	53.0	10.5	7.0	1.1

In a discussion of changing health practices of Indians of the Southwest, the Navajo-Cornell University Field Health Project at Manyfarms, Arizona, should be mentioned. The purposes of the project, established in 1955, were to survey the health needs of a rural, isolated community and to study the means by which these health needs could be met in a form acceptable to the Navajo people. As reported in Science, January, 1960, patterns of disease of special significance to teachers are cited.[2]

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[1] John Adair, *et al.*, "Patterns of Health and Disease Among the Navajos," *The Annals of the American Academy of Political and Social Science*, 211:89, May, 1957, *American Indians and American Life*.

> In the three-year period, 1956-1958, the project reports an infant mortality rate (deaths during the first year of life per 1000 live births) of 73.1.[3] [The U. S. average: 26]
>
> The average annual birth rate over a three-year period was 48.7 per 1000 persons. This extraordinarily high birth rate was associated with a high fertility rate--that is, the number of live births per 1000 women aged 14-55.[4]
>
> In this community of approximately 2,000 persons, the net gain in population (excess of births over deaths) in a three-year period was 239 persons. This represents a population expansion of "explosive" proportions.[5] [This is almost twice as many births as a fast-growing, non-white population in New York City.]
>
> A viral disease widely prevalent in our society and virtually inescapable in youth is not too serious under present-day general living conditions of the United States but becomes a considerably more serious medical problem in young children living in the hogans.[6]
>
> An examination of 270 children aged six to ten in the project area revealed that 16 per cent of this group of children showed some significant loss in hearing. When a partial loss of hearing is added to the problem of attempting to receive an education in an alien language, the implications of thse streptococcal infections are very great.[7] [National non-Indian incidence of hearing loss may be estimated at 3 per cent.]
>
> While active trachoma was found in only 2.9 per cent of school-age children under ten, inactive trachoma was found in 16.8 per cent, and 40 per cent of the persons more than 25 years of age showed evidence of previous disease.[8]

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[2] Walsh McDermott, et. al., "Introducing Modern Medicine in a Navajo Community," Science, 131:197-205; 280-287, January 22 and 29, 1960.

[3] Ibid., p. 201

[4] Ibid., p. 200.

[5] Ibid., p. 202.

[6] Ibid., p. 203.

[7] Ibid., p. 204.

[8] Ibid., p. 205.

> Congenital dislocation of the hip was found in a ratio of 1,090 persons afflicted per 100,000 population while a study in New York City revealed only a ratio of 3.8 per 100,000 population.[9]
>
> Thus far relationships between the medicine men in the community and members of the project staff have been excellent. Every effort is made to accord the medicine men the respect they deserve as the spiritual leaders of the community.[10]
>
> The medicine men believe they can distinguish between the type of "illness" most likely to be benefited by their procedures and the type that is better managed by the project staff.[11]

Many health problems of New Mexico's people are closely related to their economic situation. There are many sub-standard houses with inadequate sanitary facilities. Not only may water be very scarce, but it may be coming from contaminated sources. Modern health practices for controlling rodents and disease-carrying insects are often not carried out.

> The policy of the federal government, through the Bureau of Indian Affairs and the Public Health Service, is to help the Indian in every way possible to achieve the same degree of independence as other ethnic groups which make up our population. This policy looks far into the future toward "the termination, at the appropriate time, of federal supervision and services special to Indians." Until that day arrives, the Public Health Service will do its best to fill the needs for community hospital, local health department, and family doctor to many thousands of our Indians.[12]

Dr. Lucille Marsh writes of plans to overcome some of these problems.

> To counteract the unfavorable environment in which the Indians live, the Public Health Service has developed a sanitation program which provides instruction in the proper methods of storing and handling water, insect control, and privy construction. Indian

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[9] *Ibid.*, p. 280.

[10] *Ibid.*, p. 286.

[11] *Ibid.*, p. 286.

[12] James R. Shaw, "Guarding the Health of our Indian Citizens," *Hospitals, Journal of the American Hospital Association*, April 16, 1957, p. 8, reprinted by the Public Health Service.

> sanitarian aids, trained by the service, return to their native home and villages with newly acquired knowledge and teach their people correct sanitary procedures.
>
> Today's high food costs and a growing preference for the white man's processed foods are resulting in an excessive consumption of fats and carbohydrates. Acculturation is not an unmixed blessing for these Indians.[13]

The 1958 Annual Report on Indian Health indicates the seriousness of the problem.

> The health problems of the Indians . . . and the difficulties in reaching them with health services are unique. Nearly a fifth of all deaths among these groups result from infectious diseases which long have been under control in the general population. Their deaths from such preventable diseases as tuberculosis, gastroenteritis, influenza, and pneumonia are 3 to 6 times higher than in the population as a whole. Life expectancy among Indians . . . is 10 years shorter than the 70-year life span which prevails generally. Whereas the average age at time of death in the general population is 62, among the Indians it is only 40. This early average age at death results largely from the excessive infant death rate among Indians. Twenty-two per cent of all Indian deaths occur among infants, compared with a national average of only 7 per cent.
>
> During 1957, examinations in the field disclosed that trachoma, a virulent eye disease, was recurring among Indians in the Northwest and the Southwest. Inasmuch as this disease is relatively rare in the general population, very little in the way of professional literature was available for guidance of physicians who must diagnose and treat the condition among Indians.
>
> The excessively high death rate among Indian children remains one of the most serious problems facing the Service's Division of Indian Health. Of every 1,000 Indian infants born alive in 1956--the latest year for which figures were available--56 died within the first year. In the general population, only 26 out of each 1,000 infants born alive fail to survive beyond the first year.[14]

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[13] Lucille J. Marsh, "Health Services for Indian Mothers and Children," Children, November-December, 1957, reprint, unpaged.

[14] Public Health Service, U. S. Department of Health, Education and Welfare, Annual Report on Indian Health, 1958, unpaged.

Health Services for American Indians is a detailed study of the present status of Indian health and the health needs required to bring their standards in line with those for the country as a whole.[15]

Medical personnel in the Public Health Service are cognizant of the need for understanding cultural differences as was pointed out in the Navajo-Cornell University Field Health Project at Manyfarms. Shaw illustrates the necessity for respecting traditional Navajo beliefs in administering a hospital on the reservation.

> Last summer an Indian medicine man, flown from a distant reservation by the Public Health Service, conducted mystical rites in the setting of a modern laboratory of a tuberculosis sanatorium housing 70 Indian patients. A public address system carried his chants into every room in the hospital. The medicine man had come to the hospital in response to urgent appeals by medical officials, who called him in after two patients had fled the hospital and others were preparing to leave. Lightning, which some Indians believe is a cause of illness, twice had struck a tree on the hospital grounds. The hospital and its patients had to be blessed; the spirits concerned had to be placated. When this was done, the patients settled back with confidence that danger had been warded off. The white man's medicine had been reinforced by Indian religious concepts.[16]

Marsh also illustrates how health workers have met the cultural difference and adjusted their methods to accommodate Indian customs.

> . . . One hospital experienced little success in getting Indian women to come there to have their babies delivered. It is part of a ritual among the women in that area to drink cedar tea after delivery. Cedar tea was not served at the hospital, and as a result, prospective mothers felt they could not use its services. Once cedar tea was provided for the new mothers, acceptance of service was assured.[17]

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[15] Public Health Service, Health Services for American Indians (Washington 25, D.C.: Superintendent of Documents, United States Government Printing Office, 1957), 344 pp.

[16] Shaw, op. cit., p. 8.

[17] Marsh, loc. cit.

The high infant mortality rate, the excessive amount of deaths caused by preventable infectious diseases, and the inadequate sanitation facilities constitute pressing problems for the public health service. The alleviation of these problems and the development of a health consciousness that emphasizes prevention are both prerequisites to the ultimate future goal of termination of special services for Indians.

V. MARGINALITY

The minority groups in New Mexico constitute marginal groups with respect to their status economically, socially, or professionally. By definition:

> A marginal group is an incompletely assimilated group; one which has partially relinquished its former culture and which has not yet won full acceptance in the new culture within which it is living. A term used in connection with immigrant groups in which there has been considerable mixture of different cultures, so that attitudes and values and resultant behavior patterns are characteristic of neither; the group occupying a sort of social no-man's land. Where overt characteristics make identification easy, this stage in the assimilation process may be occupied for decades, as in the case of Orientals and Latin-speaking peoples in the United States, and such groups may evolve a fairly well integrated culture of their own containing elements drawn from both the social orders concerned.[18]

Within any society one must never lose sight of the fact that there are great individual differences in the extent to which the individual members are acculturated, from the most conservative to the most anglicized. Moore gives the following definition of the marginal man:

> The marginal man, in the broadest sense, is a person who is not a fully participating member of a social group. Most marginal persons are marginal to two or more groups, as is true of partially assimilated immigrants.[19]

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[18] Harry Estill Moore in Dictionary of Sociology, ed., Henry Pratt Fairchild (Ames, Iowa: Littlefield, Adams and Co., 1957), p. 134.

[19] *Ibid.*, p. 182.

Antonovsky characterizes marginality in social systems by the following criteria:[20]

1. "Two cultures, or sub-cultures, are in lasting contact."[21]

This suggests that they retain their identity as separate societies, and one is not diffused or in a state of dislocation and being assimilated by the other. The lasting contact indicates that they both continue to exist over a long period of time.

2. "One is dominant in terms of power and reward potential. Of the two, this is the non-marginal culture. Its members are not particularly attracted to, or influenced by, the marginal culture."[22]

This clearly represents the status in New Mexico with respect to the Anglo-American dominant culture and the marginal cultures among the Pueblo, Apache, Navajo, and Spanish-American peoples. This causes much of the difficulty of the acculturating process. The lack of interest of the Anglos in the minority cultures is interpreted as an attitude of competitive and aggressive superiority and causes animosity within the marginal groups toward the Anglo American--toward both his culture collectively and him as an individual.

3. "The boundaries between the two are sufficiently permeable for the members of the marginal culture to internalize the patterns of the dominant culture as well as their own."[23]

This is illustrated in New Mexico by the many individual members of the marginal cultures who have availed themselves of opportunities to achieve status in the dominant culture educationally, socially, and economically.

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[20] Aaron Antonovsky, "Toward a Refinement of the Marginal Man Concept," _Social_ _Forces_, 35:57-62, October, 1956.

[21] _Ibid._, p. 57.

[22] _Ibid._

[23] _Ibid._

4. The patterns of values between the divergent cultures cannot, in their entirety, be easily harmonized.[24]

Opposing values of the different ethnic groups make conflicts inevitable in any attempt to reconcile values held by Anglo Americans with much different, contradictory values held by Indians or Spanish Americans.

5. "Having acquired some of the goals of the dominant culture, members of the marginal group are pulled by the promise of greater rewards offered."[25]

Once the Pueblo Indian, for example, acquires a car or a television set, and finds how much these enlarge his horizons (life-space), two things are apt to follow logically. First, he must continue to function in a money economy somewhat equivalent to the Anglo American in order to afford the costs of operating them. Second, these artifacts extend his horizons so that he is continually introduced to additional desires which cause him to move, subtly at first, closer toward the anglicized life-style.

6. "The barriers between the two tend to be hardened by discrimination from the one side, and by pressure against 'betrayal' from the other side."[26]

Minority groups are apt to be discriminated against in competition with the dominant culture. This discrimination will appear either in clearly recognizable form or in very subtle ways not easily recognized by members of the dominant culture. In the event individuals in minority groups make the effort to compete and take the best place they can within the dominant culture, they sacrifice much of the "in-group" status they might have had with their own minority group. The Indian who acquires education and accepts a job in state government or under civil service in his attempt to help his own people may find that his people have not accepted the dichotomy of his status. They feel that he cannot have their best interests at heart and still place his primary allegiance with the state or the nation.

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[24] *Ibid.* [25] *Ibid.* [26] *Ibid.*

7. "Marginality acquires particular intensity when the clash persists through more than one generation."[27]

In New Mexico, the problem has existed for centuries. Anglo Americans were the last Americans. The American Indian feels in a very real sense that he was the first. Through the years, the Indian and the Spanish American cultures apparently learned to live side by side and to maintain their social systems in lasting contact. Their life values, their family structure, their attitudes toward work, time, and saving had much in common, but were not compatible with the aggression of the Anglo American who entered New Mexico in large numbers in the middle of the nineteenth century.

VI. SUMMARY

The intensity of feeling among Indian groups today is caused by many factors. First, the economic base of the people is undergoing drastic change. All of the artifacts that provide modern living among Anglo Americans are being introduced into Indian homes. This requires a money economy, causing the adults in a family to leave the pueblo to drive to the city for work. Second, the plan to transfer the Indian children into public school classrooms has been effected rapidly and with little consideration of the time needed by the Indians to study, discuss and understand the ramifications of the plan. This transfer confronts Indian elders with many philosophical problems about the future of their cultural heritage. Interaction with non-Indians may facilitate learning the English language, acquiring skills for competing economically in the labor market, and attaining a middle-class standard of living. However, the elders must face the possibility that their children will not learn their mother tongue, the nature lore, the moral values, the ceremonial rites, and the prayers of their people, and to them, these are more important.

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[27] Ibid.

Third, the Indians may have considerable anxiety that the transfer of children to public schools, the move toward a money economy, and the conversion from extended to nuclear family living, are all steps toward the termination of services heretofore provided through the Bureau of Indian Affairs. They have also witnessed the transfer of health services from the Bureau of Indian Affairs to the United States Public Health Service, and they have recently been urged to exercise the voting privilege.

The culture barrier, the language barrier and the experience barrier can best be met in the classroom if the teacher understands the feelings and attitudes of the people and knows that their anxieties are real and logical to them. One must "start where people are" in order to work out these problems with mutual patience, tolerance, and tact.

When people understand the motives and purposes of the school and when teachers are able to empathize adequately with them in their difficulies to see a problem through, cultural differences and basic differences in beliefs will be respected, and the school will be more successful in reaching its goals.

In the acculturation of a minority group, there is apt to be a problem of social disorganization. This dislocation of members within the marginal culture has often resulted in increase in juvenile delinquency, increase in alcoholism, and increase in marital and family disharmony. It should be one major goal of the school to minimize social disorganization in the acculturation process. By bringing to bear their best efforts in educating children, in guiding and counseling parents, and in affording parents sources of help they need in working out their problems, social agencies can work to minimize the problem of transition.

CHAPTER V

BICULTURAL PROBLEMS IN RELATION TO SCHOOL ACHIEVEMENT

I. INTRODUCTION

The problem of poor academic achievement has been continually underscored for both the Indian and the Spanish American. Chapter V reviews this educational retardation and the problem of over-ageness in grade, both in historical perspective and as found in the present research study.

Causal factors are explored in two final sections of this chapter: first, the relationship of language to culture, and second, the factors influencing the learning of a second language.

II. HISTORICAL EVIDENCE OF EDUCATIONAL RETARDATION

Educational retardation may be defined as the extent to which students fail to achieve academically according to their capacity for such achievement. Children of normal intelligence are expected to move through the public school grades on an extremely homogeneous age-in-grade scale. Academic performance at grade-placement for children in the normal range of intelligence indicates achievement that is neither retarded nor accelerated. In New Mexico, however, two problems are readily apparent. The first is that many children are over-age in grade. The second problem is that a general tendency has existed for a long time, and is still prevalent, for pupils to become more and more educationally retarded as they progress through school, with many of these students becoming hopelessly lost in high school.

Retardation Within Grades

The problem of being over-age in grade has been detailed by Tireman in his book, Teaching Spanish-Speaking Children.[1] The problem of classes becoming more and more retarded in achievement was revealed by Tireman in 1936 with respect to Spanish-American children. His findings are presented in Table IV.

TABLE IV[2]

"L" COUNTY RURAL SCHOOLS SURVEY

Metropolitan Achievement Tests--Reading--April, May, 1936

Grade	Number of Pupils	Language Group	Median Achievement			Norm
			Reading	Vocabulary	Av.Reading	
7	35	Spanish	5.6	5.4	5.5	7.8
6	41	Spanish	5.1	4.8	5.0	6.8
5	62	Spanish	4.9	4.6	4.7	5.8
4	70	Spanish	4.1	4.0	4.1	4.8
3	60	Spanish	3.3	2.8	3.1	3.8
2	82	Spanish	2.6	2.2	2.3	2.8
1	75	Spanish	2.1	1.9	1.9	1.8

Coombs and his associates reported the same problem for Indian children. Testing Indian children in six geographical areas, including the Albuquerque area, they reported that:

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[1] Loyd S. Tireman, Teaching Spanish-Speaking Children (Albuquerque: University of New Mexico Press, 1948), pp. 45-50.

[2] Ibid., p. 52.

[3] L. Madison Coombs, et al., The Indian Child Goes to School (Washington: U.S. Department of the Interior, Bureau of Indian Affairs, 1958).

> . . . Whereas the mean scores of the area groups were close to the published norms of the California Achievement Tests at grades four and five, they tended to fall progressively farther below the "national" norms as the higher grades were reached. This phenomenon has characterized the scores of every area group in this study.[4]

The sampling of the Coombs report included 13,686 Indian school children.[5] Test results were analyzed for Indian children in public schools, Federal schools, and mission schools. A clear-cut general advantage was found in favor of the Indian children in public schools.[6] The writers emphasized the middle-class orientation of the curriculum of the school and the serious cultural conflicts that will likely cause Indian children to learn school subjects less well than white children.

More recently, Boyce writes:

> . . . That achievement medians of Indian children, regardless of language handicap, tend to be up to norm by the end of second grade. Thereafter, more and more Indian children fall below published norms. By the end of the sixth grade, Indian achievement medians in the three R's tend to be two or more grades below published norms.[7]

Age-Grade Status

Sanchéz reported in 1932 that 41 per cent of the elementary rural children in New Mexico were over-age for their grade placement.[8] The mean over-ageness was 2.2 years. Sininger's findings substantiated the report of Sanchéz.[9] Coombs reports age-grade distributions for all grades from fourth through twelfth in his report. The age-grade distribution for 293 fifth-grade Indian children in the Albuquerque area in 1951 is shown in Table V below. The mean over-ageness for the large group of these children was 2.1 years in 1951. However, too few fifth-grade children in public schools were tested in order to generalize.

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[4] Ibid., p. 3.

[5] Ibid., p. 18.

[6] Ibid., p. 4.

[7] George Boyce, "Why Do Indians Quit School?" Indian Education, No. 344, (Lawrence, Kansas: Haskell Institute, May 1, 1960), p. 5.

[8] George I. Sanchéz, The Age-Grade Status of the Rural Child in New Mexico Public Elementary Schools, 1931-1932, Educational Research Bulletin, Vol. I (Santa Fe: Department of Education, State of New Mexico, Nov., 1932).

TABLE V[10]

AGE-GRADE DISTRIBUTIONS
ALBUQUERQUE AREA, 1951
INDIAN CHILDREN IN FEDERAL SCHOOLS
AND PUBLIC SCHOOLS IN GRADE 5

Age	Federal	Public
17		
16	1	
15	4	
14	16	
13	40	1
12	82	5
11	101	4
10	36	2
9	1	
Number	281	12
Median age	12.0	12.0
Non-Indian Age Expectancy	10.5	10.5
Mean Years Overage	2.1	1.67
Median Years Overage	1.5	1.5

The mean chronological ages and reading grade-placement scores for various ethnic groups in a public school fifth-grade sample, April, 1960, show the average over-ageness of Apache, Pueblo and Spanish-American children to be about one year. (See Table VI.) The Navajo children were over-age in grade about one and one-half years. The retardation in reading achievement, however, as measured by the Gates Reading Survey Test,[11] was one and one-half to two years, in spite of the over-age in grade status.

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[9] Harlan Sininger, "An Age-Grade Study of the San Jose Training School and Its Two Control Schools," San Jose Training School, University of New Mexico Bulletin, School Series, Vol. 1, No. 2 (Albuquerque: University of New Mexico, 1931), pp. 3-10.

[10] Coombs, op. cit., p. 109.

TABLE VI

MEAN CHRONOLOGICAL AGES AND READING GRADE-PLACEMENT SCORES BY ETHNIC GROUPS, APRIL, 1960 GATES READING SURVEY TEST

	Age-Grade Expectancy	Rural Anglo (N=31)	Apache (N=52)	Navajo (N=40)	Pueblo (N=82)	Spanish American (N=40)
Chronological Age	11-0	11-0	12-0	13-7	12-2	12-1
Reading Grade Placement	5.8	5.7	4.2	3.7	3.9	4.0

It is apparent from data obtained in 1960 that there continues to be one full year of over-ageness for all minority ethnic groups. This is not as significant, however, as the indication that even though the sample children were over-age in grade, they were an additional one and one-half to two years retarded in achievement as measured by the Gates Reading Survey Test. Over-ageness and retardation must be combined to determine the full extent of educational retardation.

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[11] Arthur I. Gates, Gates Reading Survey, Form 3 (New York: Teachers College, Columbia University, 1958).

III. EDUCATIONAL RETARDATION AS MEASURED BY CURRENT TEST DATA

In the conduct of the Indian Research Study, pilot schools enrolling children from Spanish-American, Indian, and Anglo cultures were selected. In order to establish objective data with respect to educational achievement, survey testing was done by the research study staff.

This section of the report will present the results of testing done in the elementary school, the junior high school, and the senior high school. A brief report of college success of Indian students enrolling at the University of New Mexico is also presented. The severity of the educational retardation at all grade levels is obvious. The emphasis in this entire testing program has been in reading comprehension and vocabulary. The Iowa Tests of Basic Skills and the Gilmore Oral Reading Test were administered at the elementary grade level; the Standard Vocabulary Test was administered in the seventh and eight grades; and the Diagnostic Reading Survey Test was administered in the eleventh and twelfth grades.

The Iowa Tests of Basic Skills[12]

The Iowa Tests were administered to 657 pupils in five pilot schools. The Indian Research Study staff tested 158 third-grade, 175 fourth-grade, 178 fifth-grade, and 146 sixth-grade pupils. By ethnic groups, 107 pupils were Anglos, 109 were Spanish American, and 441 were Indians. Achievement by grade levels is presented in Table VII. It will be noted in Table VII that by grades, these pupils were educationally retarded six months in third

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[12] E. F. Linquist and A. N. Hieronymus, Iowa Tests of Basic Skills, Form I (Boston: Houghton Mifflin Co., 1955).

TABLE VII

GRADE PLACEMENT SCORES, JANUARY, 1959

IOWA TESTS OF BASIC SKILLS, FORM I

Grade	Number *Tested	LANGUAGE SKILLS							WORK-STUDY SKILLS				ARITHMETIC SKILLS			COMPOSITE
		Vocabulary	Reading	Spelling	Capitalization	Punctuation	Usage	TOTAL	Maps	Graphs Tables	Ref. Mat.	TOTAL	Concepts	Prob. Solv.	TOTAL	
3	158	2.9	2.8	2.9	3.1	3.1	2.9	3.0	2.9	2.8	2.9	2.9	2.7	2.8	2.8	2.9
4	175	3.3	3.4	3.8	3.9	4.4	3.4	3.9	3.5	3.4	4.0	3.6	3.5	3.7	3.6	3.6
5	178	4.1	4.0	4.6	4.6	4.9	4.1	4.6	4.1	4.3	4.6	4.3	4.1	4.4	4.3	4.3
6	146	5.0	5.4	6.1	5.9	5.5	5.0	5.6	5.4	5.7	5.7	5.6	5.4	5.8	5.6	5.5

*Since this test was administered in January, the accurate grade placement in each class would be 3.5, 4.5, 5.5, and 6.5.

grade, nine months in fourth grade, eleven months in fifth grade, and ten months in sixth grade when the composite scores are subtracted from grade norms of 3.5, 4.5, 5.5, and 6.5. Table VIII shows median composite scores by grade level for each ethnic group. The Anglo pupils tested about one-half year below the national median at all grade levels. The small sampling of Spanish-American pupils tested one-half year below the national norms in third and sixth grades and one year below the national median in fourth and fifth grades. The Indian population became more educationally retarded as they progressed through the elementary school. Retardation was seven months in third grade, eleven months in fourth grade, fourteen months in fifth grade, and fifteen months in sixth grade. (See Table VIII.)

Separate answer sheets were used for machine scoring. It soon became apparent that this testing situation was new and strange to many of these children. Because the situation was new, many children imitated the practices of classmates, and many did not follow directions. Small sections of the answer sheet are designated for various sub-sections of the test, and while the examiner was explaining the directions for a sub-section of the test, some children made interesting designs on the answer sheet by filling in the circles for that section before they were even ready to begin reading the test!

Because the functioning level of the pupils did not seem to approximate the results obtained when the Iowa tests were scored, it was decided to administer the Gilmore Oral Reading Test to a large sampling of these same children.

TABLE VIII

SUMMARY BY ETHNIC GROUPS

IOWA TESTS OF BASIC SKILLS, FORM I

JANUARY, 1959

Ethnic Group	Grade	Number Tested	National Median	Testing Program Median Scores
Anglo	3	21	3.5	2.9
	4	36	4.5	4.1
	5	25	5.5	4.9
	6	25	6.5	6.0
Spanish-American	3	28	3.5	3.0
	4	20	4.5	3.6
	5	37	5.5	4.4
	6	24	6.5	5.9
Indian	3	127	3.5	2.8
	4	108	4.5	3.4
	5	118	5.5	4.1
	6	88	6.5	5.0

The Gilmore Oral Reading Test[13]

The Gilmore Oral Reading Test was administered to 843 children in grades three through six in the seven pilot schools. The Gilmore test is an individually administered oral reading test with comprehension questions. Twelve to fifteen minutes are required for the completion of one test. In his evaluation of this test, Harris says:

> The Gilmore Oral Reading Test is a quite satisfactory standardized oral reading test. There are two forms, each consisting of ten paragraphs ranging in difficulty from first grade to high school. Even in the very easy paragraphs the language is not babyish, and the paragraphs form a continuing story. The pupil reads from a spiral-bound heavy cardboard booklet, with one paragraph on each page. The examiner records errors, time in seconds, and answers to comprehension questions in a separate record booklet.[14]
>
> Norms are provided for accuracy, comprehension, and rate, and directions are provided in a twenty-six page manual. Although the norms at first-grade level are too severe, this test will probably remain popular for quite a while.[15]

A summary of this test administration by classes is given in Table IX. The summary by ethnic groups is given in Table X. The results of the Gilmore test presented in Table IX show that total class groups are failing to achieve satisfactory class median scores.

Table X shows that, while Anglo children achieved approximately at grade level, Spanish-American children were about one year educationally retarded in fifth and sixth grades. Indian children showed one and one-half years of retardation in third grade, two years in fourth and fifth grades, and three years in sixth grade. There is little difference in the median

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[13] John V. Gilmore, Gilmore Oral Reading Test, Form A (Yonkers-on-Hudson: World Book Company, 1952).

[14] Albert J. Harris, How to Increase Reading Ability (New York: Longmans Green & Co., 1956), p. 198.

[15] *Ibid.*, p. 201.

TABLE IX

GRADE PLACEMENT SCORES AND RATINGS BY SCHOOLS
GILMORE ORAL READING TEST, FORM A
SPRING 1959

School	Grade*	Number of Students	ACCURACY		COMPREHENSION		RATE	
			Grade Equiv.	Rating	Grade Equiv.	Rating	WPM	Rating
A	3	39	2.1	Below Average	2.8	Average	72	Slow
	4	27	3.3	Average	4.5	Average	84	Average
	5	28	3.5	Below Average	4.3	Average	96	Slow
	6	30	5.2	Below Average	5.6	Below Average	108	Slow
B	3	28	3.3	Average	4.0	Average	105	Average
	4	24	3.4	Average	4.5	Average	108	Average
	5	9	4.9	Average	6.8	Above Average	132	Average
C	3	29	2.8	Below Average	3.6	Average	81	Average
	4	25	3.6	Below Average	3.9	Average	102	Average
	5	27	3.4	Inferior	4.1	Below Average	108	Slow
	6	25	4.7	Below Average	5.3	Below Average	120	Slow
D	3	28	2.8	Below Average	3.1	Average	78	Average
	4	34	3.1	Below Average	3.2	Below Average	90	Slow
	5	16	3.5	Inferior	4.5	Below Average	102	Slow
E	3	82	2.2	Below Average	1.9	Below Average	84	Average
	4	73	2.8	Inferior	2.2	Inferior	96	Slow
	5	73	3.6	Inferior	2.6	Inferior	108	Slow
	6	55	3.4	Inferior	2.6	Inferior	108	Slow
F	3	12	2.9	Average	4.0	Average	78	Average
	4	18	3.9	Below Average	4.5	Average	111	Average
	5	20	3.4	Inferior	4.4	Below Average	99	Slow
	6	11	5.4	Below Average	5.3	Below Average	120	Slow
G	3	32	1.6	Below Average	1.9	Below Average	54	Slow
	4	30	2.8	Inferior	3.0	Below Average	90	Slow
	5	29	4.4	Below Average	3.9	Below Average	90	Slow
	6	28	4.0	Below Average	4.5	Below Average	90	Slow

*Since this test was administered in February, March, and April, the accurate grade placement in each class would be 3.6, 3.7, 3.8; 4.6, 4.7, 4.8; 5.6, 5.7, 5.8; or 6.6, 6.7, 6.8.

TABLE X

SUMMARY BY ETHNIC GROUPS

GILMORE ORAL READING TEST, FORM A

SPRING 1959

Ethnic Group	Grade	Number Tested	National Median	Testing Program Median Scores	
				Accuracy	Comprehension
Anglo	3	34	3.5	3.2	3.7
	4	44	4.5	4.0	5.1
	5	24	5.5	5.4	5.7
	6	28	6.5	5.6	6.3
Spanish American	3	40	3.5	3.1	3.5
	4	32	4.5	3.5	4.1
	5	24	5.5	3.8	4.5
	6	28	6.5	5.4	5.7
Indian	3	181	3.5	2.3	1.9
	4	164	4.5	2.8	2.6
	5	127	5.5	3.6	3.2
	6	117	6.5	3.8	3.3

scores for accuracy and comprehension, indicating that remedial reading must include both the mechanics of reading and the comprehension of ideas.

The New Standard Vocabulary Test[16]

The New Standard Vocabulary Test was administered to 143 seventh and eighth grade students in six pilot schools. A summary of performance of these pupils is presented in Table XI. Median raw scores and percentiles are given.

These results give further evidence of the limited vocabularies in the English language by many of these students. Because of the low percentile scores for total classes, a break-down by ethnic groups is unnecessary to show the severity of educational retardation.

The Diagnostic Reading Tests--Survey Section[17]

The Survey Section of the Diagnostic Reading Test was administered by Townsend[18] to 558 eleventh and twelfth graders in four selected high schools in New Mexico where large numbers of Indian and Spanish-American students are enrolled. The results, presented in Tables XII and XIII, afford incontestable evidence that there are serious problems of educational retardation persisting in New Mexico which are not being satisfactorily researched or corrected.

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[16] Miriam M. Bryan and Janet G. Afflerbach, New Standard Vocabulary Test--Form A, prepared under direction of Herbert A. Landry (New York: Educational Measurement Service, 1955).

[17] Frances O. Triggs, Chairman, Diagnostic Reading Tests--Survey Section, (New York: The Committee on Diagnostic Reading Tests, Inc., 1952).

[18] Irving D. Townsend, graduate student, University of New Mexico, research in progress, May, 1960.

TABLE XI

MEDIAN RAW SCORES AND PERCENTILE RANKS NEW STANDARD VOCABULARY TEST, FORM A

NOVEMBER, 1958

SEVENTH GRADE

School	Number of Students	Median Raw Score	Median Percentile Rank
B	29	33	17
C	28	30.5	13
D	11	42	34
E	48	27	9
F	15	39	27
G	21	36	20

EIGHTH GRADE

B	30	36	11
D	17	38	13
E	12	31	6
F	6	38	13
G	13	45	20

TABLE XII

PERCENTILE RATINGS OF 326 ELEVENTH-GRADE STUDENTS IN MULTI-CULTURAL CLASSROOMS

DIAGNOSTIC READING TEST, SURVEY SECTION, SPRING 1960

Percentile	School H N=65	School I N=37	School J N=160	School K N=64	Total N=326
90-99	2	0	3	1	6
80-89	0	0	15	4	19
70-79	2	1	36	2	41
60-69	2	6	35	0	43
50-59	5	5	19	2	31
40-49	2	5	26	6	39
30-39	2	10	15	6	33
20-29	3	8	11	5	27
10-19	8	2	0	5	15
0-9	39	0	0	33	72

TABLE XIII

PERCENTILE RATINGS OF 232 TWELFTH-GRADE STUDENTS IN MULTI-CULTURAL CLASSROOMS

DIAGNOSTIC READING TEST, SURVEY SECTION, SPRING 1960

Percentile	School H N=47	School I N=29	School J N=99	School K N=57	Total N=232
90-99	0	0	5	0	5
80-89	0	3	10	3	16
70-79	0	4	12	1	17
60-69	0	1	12	2	15
50-59	0	10	5	5	20
40-49	0	4	9	3	16
30-39	1	4	6	3	14
20-29	4	3	14	9	30
10-19	11	0	9	8	28
0-9	31	0	17	23	71

The Research Study staff concludes that any solution to the problem necessitates, on the part of the teacher, (1) an understanding of the significance of the cultural differences, (2) proficiency in the teaching of English as a second language, and (3) ability to use remedial teaching methods appropriate to the level of functioning of the groups taught.

Success of Indian Students Matriculating at the University of New Mexico

Practically all adolescent and young adult Indians in New Mexico are seriously handicapped in academic pursuits today because of the culture barrier which they must face in transition from their reservation life to campus life in the dominant culture. The value system which gives directions to living and determines life goals for Indians has not established the kinds of motivations, aspirations, and thought patterns for success in college.

This cultural barrier underlies two much more obvious problems. These are the language barrier and educational retardation. Few Indians are competent in the use of English. Some are urged strongly (almost coercively) to know the mother tongue well so they can talk with the old people. Educational retardation to a severe degree is a natural result.

Statistics which will substantiate the problem further are given:

1. The records of 100 Southwest Indians enrolled at the University of New Mexico between 1954 and 1958 were studied. The students in 1954 were of both freshman and upper-class status. The records of these 100 students showed that 70 per cent dropped school with low grades; 20 per cent were currently enrolled; and 10 per cent obtained degrees. Significantly, of the 30 per cent who remained in school or obtained degrees, the majority were at some time placed on probation for inadequate scholarship.

2. The records of thirty-one New Mexico Indians enrolled in the University during the fall of 1958 showed the following disposition with respect to grades earned at the end of the first semester: six left school before the end of the first semester; twelve were placed on probation by the University College (grade point average below 0.6); eight earned grade-point averages between 0.6 and 1.0, acceptable in the University College only; and five earned grade-point averages of 1.0 or better (C = 1 grade point), which is acceptable in the degree-granting colleges. Thus, 84 per cent did not finish the first semester with a "C" average.

The attrition rates given above for Indians can be compared with the overall attrition rate of 49 per cent for college freshmen at the University of New Mexico. This 49 per cent includes all those who leave the University or fail to re-register the second semester for any reason.

Public school personnel further attest that there are students graduating from high school each spring who have sufficient learning ability to profit from higher education, and yet who do not continue their education. They are handicapped in the language arts skills, so that their level of use of the English language, their ability to think in the English language, and their assimilation of the developmental reading skills are inadequate for college success.

Summary

The results of the current testing program reinforce the previous findings that as minority ethnic group children progress through the school grades, their achievement falls farther and farther behind. Not only are these students from one to two years over-age for their grades, on the average, but they are also educationally retarded an additional one to two years in achievement on standardized tests. In two of four selected high schools, half of the eleventh and twelfth grade students were in the bottom decile when compared to national norms on a survey reading test.

The testing program showed that groups of Anglo children scored from approximate grade placement to one-half year of retardation in achievement. Spanish-American students were, on the average, one year educationally retarded in fifth and sixth grade, but they were an additional year over-age in grade. Indian children tended to be two to three years retarded in reading ability in sixth grade and were one to two years over-age in grade.

Since social scientists have adequately established the fact that intelligence fits a normal distribution in all ethnic groups and is comparable from group to group, differences in intelligence cannot explain the failure of the schools to teach minority group children. With large numbers of unselected children in the test samples, a normal range of intelligence is expected. The logical assumption follows that only about 20 per cent of Indian children or Spanish-American children have intelligence levels below the normal range (I.Q. of 90-110), and that only approximately 3 per cent may be designated as mentally retarded (I.Q. of 70 or below). As in the Anglo population, most of these children have adequate intelligence to perform at grade level.

IV. THE RELATIONSHIP OF LANGUAGE TO CULTURE

Bilingualism

Bilingualism is defined differently by different people. Tireman wrote that the word bilingualism has a "range in meaning from equal facility in two or more languages to the very simple use of a few phrases in another tongue for asking directions or ordering a meal."[19] Malherbe defined bilingualism as varying degrees of understanding of two languages, and he wrote that bilingualism should not be considered synonymous with equilingualism.[20] He delineates six stages or steps that correspond to the social or professional demands in using a second language.[21]

Stage I: Able to *follow intelligently an ordinary conversation*, speech or sermon in the second language, both in its written and spoken forms.

Stage II: Able to *converse intelligibly* and with a fair amount of fluency in the second language.

Stage III: Able to *write the second language correctly*.

Stage IV: Able to *function as a bilingual teacher*. Correct, convincing, and fluent in both writing and speaking; and both accent and idiom must be appropriate for children to imitate.

Stage V: Able to use and *is a student of both languages*. Is more competent than 90 per cent of those who use either language as their mother tongue.

Stage VI: Theoretically *able to approach 100 per cent proficiency* in both languages.

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[19] Tireman, *op. cit.*, p. 8.

[20] E. G. Malherbe, *The Bilingual School* (New York: Longmans, Green and Co., 1946), pp. 17-29.

[21] *Ibid.*, pp. 19-26.

People are bilingual in varying degrees. A tourist in a foreign country may be able to say "good morning" in two or three languages, but his guide will deliver complete lectures in several languages.

The problem of language in New Mexico has not been the same problem which is faced in other parts of the United States where many different foreign groups have migrated, diffused into the American "melting pot," and in two generations or so, become users of the common language. The Indian and the Spanish American settled in the Southwest centuries before the Anglo came. Both Oraibi and Acoma are cited by sociologists as being the oldest continuously inhabited villages in the United States and are believed to be 900 to 1000 years old. Civilization that persists for so long a time develops a cultural heritage in which there is pride and allegiance. It is no wonder these people have resisted absorption into the Anglo culture.

Language and Culture

The transmission of a man's heritage is through his language. It is the conveyor of civilization.

> Communication through spoken and written language belongs to man and to him alone. It is the most important influence in his [illegible] has permitted each generation to rise on the shoulders of the thinkers and achievers who have gone before, to profit from their gains, to avoid their mistakes, and to pursue their dreams and aspirations and make some of them realities.[22]

Language is an integral part of a people's culture. It is the means by which the attitudes and feelings of the group are made known. Anthropologists and linguists have stated this inter-dependence of culture and language. The selected quotations which follow show how the relationship of language to culture has been viewed by linguists through the past fifty years.

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[22] Ruth Strickland, The Language Arts in the Elementary School (Boston: D. C. Heath and Company, 1951), p. 3.

Boas states that:

> . . . Linguistic inquiry is part and parcel of a thorough investigation of the psychology of the peoples of the world.[23]

Sapir's feeling is that:

> . . . Language powerfully conditions all our thinking about social problems and processes. Human beings . . . are very much at the mercy of the particular language which has become the medium of expression for their society.[24]

According to Whorf:

> . . . The linguistic system [in other words, the grammar] of each language is not merely a reproducing instrument for voicing ideas but rather is itself the shaper of ideas, the program and guide for the individual's mental activity, for his analysis of impressions, for his synthesis of his mental stock in trade.[25]

Greenberg writes:

> Since natural language is not devised by philosophers but develops as a living instrument of a community in its adjustment to a variety of changing needs, one would not expect and, in my experience, at least, one does not find any underlying semantic patterns such as would be required for the semantic system of a language to reflect some over-all world view of a metaphysical nature.[26]

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[23] Harry Hoijer (ed.), *Language in Culture*, Vol. 56, No. 6, Part 2, Memoir No. 79 (Chicago: University of Chicago Press, The American Anthropological Association, December 1954), p. 92, citing Franz Boas, "Introduction," *Handbook of American Indian Languages*, Part I (Washington, D.C.; 1911), p. 93.

[24] *Ibid*., p. 92, citing Edward Sapir, "Conceptual Categories in Primitive Languages," *Science*, 74:578, 1931.

[25] *Ibid*., p. 94, citirg Benjamin J. Whorf, *Collected Papers on Metalinguistics* (Washington, D.C.: Department of State, Foreign Service Institute, 1952), p. 5.

[26] *Ibid*., ppp 3-19, citing Joseph H. Greenberg, "Concerning Inferences from Linguistic to Nonlinguistic Data."

According to Goldschmidt:

> Language is a crucial attribute of culture because:
> (1) It is a notative system by which the world and its affairs are organized for the speaker.
> (2) It carries vicarious experiences so that the hearer and speaker "experience" to some extent that to which the verbalization refers.
> (3) Persons first perceive many of their experiences through the medium of language.
>
> Thus the world, as it comes to be perceived by each individual, is in large part filtered through the medium of his mother tongue.[27]

Languages are socially determined. Their uses, form and content mirror physical setting, historical events, contacts, cultural level, mental climate, and cultural history. The language of a group is an index of most of its characteristics. Conversely, cultural and social structures are affected by the language system. Inadequate command of language retards cultural development and acquisition. The language system and socio-cultural context of a society cannot be separated--each is both the cause and effect of the other.[28]

An individual builds his repertoire of thought and action based on the cultural behavior of which he is a part. New ideas must be interpreted in the minds that are to assimilate them. The means by which this is accomplished is language, but language is strictly relative to the culture of its users, intermeshing to the point that one can be understood fully only in the light of the other.[29]

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[27] Walter Goldschmidt, "Language and Culture: A Reply," Quarterly Journal of Speech, 41:279-83, October, 1955.

[28] J. O. Hertzler, "Toward A Sociology of Language," Social Forces, 32:109-19, December, 1953.

[29] Douglas G. Haring, "Cultural Contexts of Thought and Communication," Quarterly Journal of Speech, 37:161-72, April, 1951.

It becomes apparent, in this context, why the old Pueblo Indian will insist that his children or grandchildren must know the mother tongue well since this is the very instrument by which his culture will be continued.

V. FACTORS INFLUENCING THE LEARNING OF ENGLISH AS A SECOND LANGUAGE

The cultural difference, the relationship of language to culture, and the serious degree of educational retardation have been discussed as they relate to the education of the Indian and Spanish-American children in New Mexico. If these children are to succeed academically in the public schools, they must develop a greater mastery of English for communication than they have done in the past. Probably the greatest need in New Mexico's schools is that all these minority groups become more articulate in English. Many different factors influence the child's learning of English as a second language. Some of these are: desire, amount of exposure, socio-economic status, influence of leaders, schools, educational adjuncts, and elements common to the two languages under consideration.[30]

Desire. Of first importance is the desire with which the learner approaches the learning. This is dependent upon the individual's receptivity to change or his ability to adopt new thinking patterns. He will succeed in some degree, too, as socio-economic pressures reward him for doing so. Immediate reinforcement offers the greatest incentive for the individual to want to learn the new language. This is illustrated by the many families who have been brought to small communities by church groups from displaced persons' camps in Europe. These families often acquire the English language very readily because they are immediately rewarded by satisfaction of all of their life needs in the new language. This desire is more aptly illustrated negatively in New Mexico. When the people resisted the dominant Anglo culture, they also resisted the mastery of English. This desire is also negatively illustrated in Hawaii where a complex mixture of many languages allowed a kind of prostitution of the dominant languages into pidgin.

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[30] Loyd S. Tireman and Miles V. Zintz, "Factors Influencing the Learning of a Second Language," Education (in press, Fall, 1960).

Amount of Exposure. Another factor is the amount of exposure to the second language. In some communities the language of the store, the church, and the plaza is the mother tongue. The people hear and use the second language infrequently and, consequently, the rate of acquiring it is slow. This situation still predominates among all minority ethnic groups in New Mexico.

Socio-economic Status. Studies of emigrant groups in this country show that a foreign-speaking person rises in the economic scale as his ability to speak English increases. One may not be a direct cause of the other; they may happen concomitantly. In some types of employment, increased language facility extends job opportunities and financial rewards. When a man earns more money and eats and dresses better, he will tend to keep his children in school longer, and their mastery of English will be extended.

Influence of Leaders. This factor is well illustrated by the action of the Education Committee of the Navajo Tribal Council. In establishing a large scholarship fund, the Council has demonstrated to all the members of the tribe that the leaders place great value on education. Such positive action should influence many persons on the reservation who have little understanding of, or concern for, education. It follows that to acquire formal education, one must learn English well.

School. English is the language of the school. For this portion of the day, all the child's work will be done in English. And until recently, the school was the child's only exposure to the English language. Whatever facility the child had with the language was acquired in the classroom. There are many homes where this condition still exists. From the time children leave school in the afternoon until they return the next day, they hear, converse in, and think only their mother tongue, albeit Spanish, Keresan, Navajo, or Zuni.

Educational Adjuncts. Closely allied to organized education are the numerous influential educational adjuncts, such as radio, television, newspapers, and books. These aids facilitate the learning of a second language.

At this point it can only be postulated that the presence of television in the Indian pueblos in New Mexico will give much impetus to fluency in speaking English as the young Indian children watch Mickey Mouse and Zorro. One small pueblo, in which practically all the citizens are handicapped in their use of English, was reported in 1958 to have nine television sets among a total population of forty-eight families.

Common Elements. The learning of a second language is affected by the presence or lack of certain common elements in the language already known and in the one to be learned. Among these factors are the phonology and structure of the language, sentence patterning, and problems in vocabulary development. It is easier for a native Spanish-speaking person to learn English than to learn Chinese. The letters on the printed page are alike in both languages, and many of the words in both languages are derived from Latin. In Chinese the printed characters are entirely different, and one reads vertically, instead of horizontally, and from right to left instead of left to right.

VI. SUMMARY

The seriousness of the problem of educational retardation has been discussed in some detail. The inter-dependence of language and culture and the many factors influencing learning English as a second language have also been presented. While the problem of poor achievement has persisted through the years, the schools have not, as yet, adequately met its challenge.

PART III

STUDIES IN THE TEACHING OF ETHNIC GROUPS

CHAPTER VI

TEACHER UNDERSTANDING OF SOCIO-CULTURAL DIFFERENCES IN CHILDREN

I. INTRODUCTION

In the two studies reported in Chapter VI, it was hypothesized that the educational retardation found in minority group children was caused by the school through its failure to consider sufficiently in the development of the curriculum the cultural orientations of the children, the value configurations, and the language barrier.

In the spring of 1959, a questionnaire study was made which specifically attempted to measure teacher awareness of socio-cultural differences in classrooms enrolling children with different ethnic backgrounds. During the 1959 summer session, the same questionnaire was applied to a workshop group of teachers who were enrolled in a graduate seminar in bicultural education problems. Both of these studies are reported in this chapter.[1]

II. TEACHER AWARENESS OF SOCIO-CULTURAL DIFFERENCES IN MULTI-CULTURAL CLASSROOMS

The purpose of this study was to determine the extent to which selected teachers are aware of socio-cultural differences as they affect the education of Spanish-speaking and Indian children in New Mexico.

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[1] Chapter VI is based entirely upon the following two studies: Horacio Ulibarri, "Teacher Awareness of Socio-Cultural Differences in Multi-Cultural Classrooms" (unpublished doctoral dissertation, University of New Mexico, Albuquerque, 1959); and Horacio Ulibarri and Miles V. Zintz, "Growth in Teacher Awareness of Socio-Cultural Differences in Multi-Cultural Classrooms" (unpublished paper, University of New Mexico, Albuquerque, 1960).(Mimeographed). Mr. Ulibarri served as Coordinator of the Indian Research Study from 1957 to 1959.

A major premise of the study was that the ineffectiveness of the public schools in the education of minority groups, such as the Spanish American and the Indian in New Mexico, was due in large measure to the failure to consider sufficiently the cultural difference and the behavior arising therefrom, in the development of the curricula. It was the hypothesis of this study that teachers, in general, were not aware of many of the socio-cultural factors that seem to be extremely important in the education of children from these minority groups.

A twenty-item questionnaire was prepared which asked teachers to rate items on a five-point scale for each ethnic group, Indian, Anglo, and Spanish American. The types of items evaluated included:

1. Meeting psychological needs of children;
2. Emphasis on "competition" as a value;
3. Time orientation;
4. Scientific explanation of natural phenomena;
5. Attitudes toward economic efficiency;
6. Experiences of children rooted in their life space;
7. Attitudes toward education and the school curriculum;
8. Range of abilities within the class;
9. Differences in intelligence in ethnic groups.

The questionnaire was scaled from 1 to 5, with the following ratings: 1 = very little; 2 = below average; 3 = average; 4 = above average; 5 = very much. Teachers were asked to circle the number which most appropriately indicated their opinion regarding each item. Sample items follow. (For complete questionnaire, see Appendix A.)

4. Most school curricula are primarily oriented to the future. They emphasize hard work in the present in order to be rewarded in the future.

   To what extent do you believe the following children are able to see this future-orientation and to adjust to working hard in the present in order to be rewarded in the future?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

5. In the operation of the school, great emphasis is placed upon competition.

   To what extent do you believe the home environment of the following children develops the value of competition?

   (Scale repeated here)

. . .

6. Society today places much emphasis on scientific interpretation of natural phenomena.

   To what extent do you believe the following children are receptive to scientific interpretation of natural phenomena?

   (Scale repeated here)

. . .

17. Most curricula are geared to middle-class Anglo culture. Thus, it seems that middle-class Anglo children should be the most proficient in school work. This, however, does not exclude children from other cultures or social classes from achieving up to par as far as grade levels are concerned.

    To what extent do you believe the following children are achieving at grade level in school?

    (Scale repeated here)

. . .

19. In general, the Indian children talk in their native tongue with one another and at home; the same generally holds true for the Spanish American children.

    To what extent do you believe the following children are proficient in oral expression in the English language?

    (Scale repeated here)

. . .

Generally, the teachers agreed to a significant degree in assigning ranks to the three ethnic groups. That is, there was close agreement of all teachers in the sample that Indian children, for example, rated "1" or "very little" concerning their proficiency in oral expression as evaluated by Item 19.

The twenty items used were based upon available literature in anthropology, sociology, educational psychology, and education. Research reading, then, indicated that there were, academically speaking, correct answers for the ratings in the questionnaire. Using Item 19 to illustrate further, one might expect teachers to agree that proficiency in oral English expression, on a five-point scale, might rate Indians "1," Spanish-Americans "3," and Anglos "5." The one hundred teachers in the sample assigned the following mean values to this item: Indian "1.85," Spanish American "2.40," and Anglo "3.63." These scores did differentiate this specific item and negated the hypothesis of the study. However, the significance of this was lost when the teachers failed to discriminate among ethnic groups with Item 13, concerning the ability of the children to achieve at grade level in school, and with Item 18, concerning the ability of the children to read textbooks prepared for their grade level.

The coefficient of concordance[2] was used to determine the amount of agreement among the teachers in assigning similarity of rank to the three groups. For example, if the Anglo group was given an average mean of 3.2 in a five-point scale, the Spanish-American group was given 3.0, and the Indian group 2.9, and if there was close agreement in assigning these ranks, one can see differentiation in ranking. However, one must also see the degree of differentiation. The coefficient of concordance showed this differentiation. In this sample, the coefficient of concordance showed very strong agreement among the teachers in assigning similar ranks.

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[2] The Coefficient of Concordance is in effect a rank-order chi-square. Sidnev Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw Hill Book Co., 1956).

The coefficients of concordance for Ulibarri's sample are summarized in the first column in Table XIV. A low value in the coefficient of concordance shows strong differentiation of socio-cultural differences of the three groups, Anglo, Spanish-American, and Indian. A high value in the coefficient of concordance shows little or no differentiation on the part of the teachers. In general, a coefficient of concordance above .68 shows little or no differentiation. A coefficient between .40 and .67 shows disagreement among teachers in similarity of ranks assigned. Ordinarily these items would be considered of such low level of confidence that they would be disregarded. But for the purposes of this study, they can be considered significant because they show disagreement among teachers in areas where basic educational theory is in agreement. A coefficient between .39 and .00 shows mild to very strong differentiation on the part of teachers concerning socio-cultural differences of the three groups. Figure 3 shows in graphic form the summarization of results from the application of the questionnaire.

In this study, it was found that teachers, in general, are not sensitive to socio-cultural differences of Indian, Spanish-American, and Anglo children. While teachers were aware of some rather obvious differences in language, customs, and experience backgrounds, they did not interpret underlying value conflicts. Implications for education were drawn from this study. The principal implication was that equal educational opportunity is denied minority group children because the curriculum is geared to teachers' middle-class, Anglo values. The seriousness of the implication can be better appreciated if one considers the fact that these children, in general, come from homes

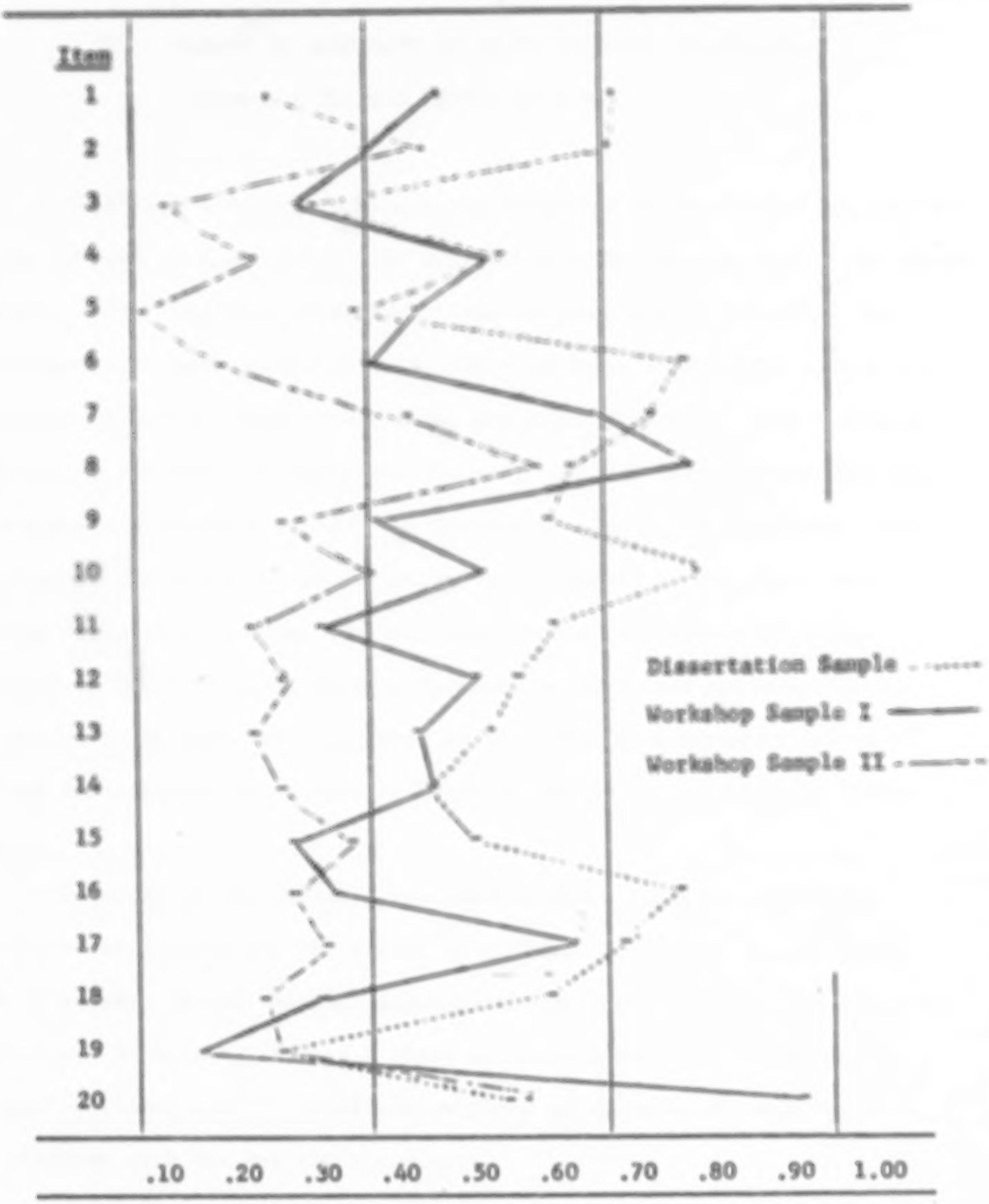
TABLE XIV

COEFFICIENT OF CONCORDANCE FOR EACH ITEM ON QUESTIONNAIRE OF TEACHER AWARENESS OF SOCIO-CULTURAL DIFFERENCES

Item Number	Dissertation Study April, 1959	Workshop Group First Application June, 1959	Workshop Group Second Application July, 1959
1	.688	.489	.260
2	.680	.350	.472
3	.294	.289	.108
4	.550	.550	.228
5	.344	.406	.072
6	.755	.350	.193
7	.733	.683	.428
8	.622	.756	.594
9	.600	.394	.272
10	.783	.528	.356
11	.600	.311	.239
12	.561	.494	.278
13	.511	.428	.239
14	.444	.444	.267
15	.505	.289	.333
16	.750	.317	.272
17	.694	.639	.305
18	.600	.294	.239
19	.272	.183	.272
20	.550	.917	.567

FIGURE 3

COEFFICIENT OF CONCORDANCE AS OBTAINED FROM RESPONSES ON QUESTIONNAIRE



which have very limited understanding of the Anglo culture, much less the narrow segment of middle-class life style emphasized by the public school.

III. GROWTH IN AWARENESS OF SOCIO-CULTURAL DIFFERENCE THROUGH A PLANNED COURSE OF STUDY

A four-week workshop in bicultural education in New Mexico was offered by the College of Education at the University of New Mexico during the summer session, 1959. The main objective of the workshop was to sensitize the participants to socio-cultural differences as those differences affect the education of Indian, Spanish-American, and Anglo children. This workshop grew out of two years of intensive research into the problems encountered by non-English-speaking children in the public schools in New Mexico which was done by the staff of the Indian Research Study. It was hoped that through direct instruction, teachers would become more aware of socio-cultural differences among Indian, Spanish-American, and Anglo children. Moreover, it was hoped that teachers would become more adept in interpreting implications for classroom behavior rooted in the cultural difference.

The scope of the workshop included academic lectures with group discussion concerning (1) the effect of cultural difference on the education of Apache, Pueblo, Navajo, and Spanish-American children; (2) cultural diffusion; (3) meaning of social class stratification; (4) the continuum of acculturation; and (5) classroom problems of educational retardation and problems with the English language.

An extensive field trip of 1200 miles was completed to permit first-hand observation of the life-space of these children. Visited were the Navajo-Cornell Medical Clinic at Manyfarms in the interior of the Navajo Reservation, the Anaconda Uranium works which mills uranium from the Laguna Reservation, the ancient home of the Acoma Indians, Walpi on First Mesa of Hopiland, and the traditional Spanish-American villages of Peñasco, Trampas, Truchas, and Chimayo in the Sangre de Cristo Mountains.

Throughout the workshop discussions, emphasis was given to understanding of the conflicts in values between ethnic groups. The major conflicts in societal values between the Indian and the Spanish-American children and the middle-class Anglo teacher presented in Chapter III were studied and discussed. Many of these same conflicting values have been taught in the traditional family situation to Navajo, Apache, Pueblo, and Spanish-American children in New Mexico. The greatest present need is not that teachers should change immediately either their beliefs or the children's, but rather, that they be completely aware of and accept the differences. Accepting and facing the differences realistically will be the first step in helping the child resolve his conflicts and ultimately grow into a truly bicultural adult.

The questionnaire of twenty items, developed for Ulibarri's study, was given to the group of thirty teachers on the first day and the last day of the four-week workshop. The same statistical analysis was applied to the workshop group as was applied to Ulibarri's study. Both the initial and final coefficients of concordance for the workshop teachers are presented in Table XIV, columns 2 and 3. The first application of the questionnaire showed a higher degree of sensitivity to socio-cultural differences among the teachers enrolled for the workshop than for Ulibarri's sample. Perhaps this sensitivity was these teachers' reason for enrolling in the workshop. The last application of the questionnaire to the workshop sample indicated a substantial growth in sensitivity in almost all areas. Only three items showed a coefficient of concordance below .39 in Ulibarri's sample; eight items showed this favorable coefficient of concordance at the first administration in the workshop, and sixteen items of the twenty showed such a coefficient of concordance at the end of the workshop. The items in which there were regressions may be explained in terms of lack of instruction in the workshop or inadequacy of the items in the questionnaire. Generally, it can be concluded that conscious, directed effort to sensitize teachers to socio-cultural differences in the education of minority group children produces substantial, positive results. Whether this knowledge on the part of the teachers will be applied in the classroom serving more than one cultural group remains to be seen.

This study has special significance in New Mexico because of its rapidly growing population, with respect to both the minority and Anglo groups. This rapid growth has necessitated, and will continue to necessitate, importing hundreds of teachers from other parts of the country who are not familiar with the cultural differences present in minority group populations.

CHAPTER VII

AN INVESTIGATION OF DIFFICULTIES WHICH INDIAN CHILDREN ENCOUNTER WITH ENGLISH AS A SECOND LANGUAGE

I. THE PROBLEM

Approximately 90 per cent of the activity that goes on in elementary schools during the formal school day is estimated to be reading and writing activity. This activity is pursued, of course, in the English language. For approximately half of the pupils in public schools in New Mexico, English is, in reality, a second language. In their attempts to perform in this bilingual situation, these children labor under a considerable handicap.

The relationship and interdependence of language and culture are well understood. The language of a people reflects the ways in which the values of the culture are practiced. This suggests that the way of thinking of an Indian child may be quite different from the way of thinking of the Anglo teacher. With language structures as different as English and Indian are, the language patterning may also present obstacles with which the child has received little help. Such elementary school children vary all the way along a continuum from very little knowledge of English to considerable knowledge of English. In families where the father and mother belong to different Indian groups, or where one parent is Indian and the other is non-Indian, the children may speak only English.

It became apparent during the research program that new devices for measuring understanding of verbal concepts in English were indicated. As a result, studies were made with respect to the understanding of idiomatic expressions, multiple meanings of common English words, simple analogies, and opposites. That the children in the pilot schools of the research study needed special education in the use of English as a second language if they were to achieve satisfactorily in school was a hypothesis to be tested.

II. DIAGNOSTIC TEST FOR STUDENTS OF ENGLISH AS A SECOND LANGUAGE[1]

Early in the research study, a search was made for possible tests of knowledge of English as a second language which could be used for elementary pupils. The Diagnostic Test for Students of English as a Second Language was obtained and used experimentally. This test is designed to test college students from foreign countries who wish to attend colleges or universities in the United States. It is a test of English usage, and measures understanding of general grammar, parts of speech, ellipses, word order in sentence patterning, and idiomatic vocabulary.

The test is diagnostic in nature. The answer sheet is so contructed that errors in any one of the categories tested are grouped for easy identification. An instructor can readily determine, then, if errors predominate in a particular part of speech, in word order, or in idioms. There is a possible score of 150, and the directions manual provides tentative norms which were established at the American University's Language Center.

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[1] A. L. Davis, Diagnostic Test for Students of English as a Second Language (Washington: Educational Services, 1956).

Score	Recommendation
125 and above	Satisfactorily prepared for college work in the United States, although students may need additional oral-aural training.
100-125	Students need considerable extra help, possibly six weeks of intensive training.
40-80	Students need to take full-time instruction in English, often as much as a semester of intensive work.

This test was administered in 1958 on an experimental basis to two small groups of Indian students in New Mexico. The first group included fifty-three Mescalero Apache Indians enrolled in a Bureau of Indian Affairs school and a public school in grades seven through twelve.[2] Results of this administration are given in Table XV. The mean score of 108.64 indicates that the group needs considerable help with English usage.

TABLE XV

DIAGNOSTIC TEST FOR STUDENTS OF ENGLISH AS A SECOND LANGUAGE

PERFORMANCE OF 53 MESCALERO APACHE STUDENTS--Grades 7-12

FEBRUARY, 1958

Raw Score Intervals	Frequency	Raw Score Intervals	Frequency	Raw Score Intervals	Frequency
146-150	1	96-100	0	46-50	1
141-145	3	91-95	2	41-45	0
136-140	2	86-90	1	36-40	0
131-135	7	81-85	2	31-35	0
126-130	3	76-80	0	26-30	1
121-125	7	71-75	2	21-25	0
116-120	7	66-70	2	16-20	0
111-115	4	61-65	1	11-15	0
106-110	2	56-60	1	6-10	0
101-105	3	51-55	0	1-5	1

Mean = 108.64 S.D. = 30.2

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[2] The staff of the Indian Research Study is indebted to Richard Scott, graduate student in sociology at the University of New Mexico, for these test results, which were compiled in February, 1958.

The second group included thirty-three students enrolled in a one-year practical nursing course.[3] Most of these students were high school graduates. Table XVI presents raw scores and principal languages of individual students. It should be noted that twenty-one of the thirty-three students scored above 125 (124½), which would indicate satisfactory preparation for college work. The mean score of 127.4 is above the minimum score indicated for success in college work. Of the seven Navajos in this group, all scored lower than 125, their median score being 109½.

TABLE XVI

DIAGNOSTIC TEST FOR STUDENTS OF ENGLISH AS A SECOND LANGUAGE
PERFORMANCE OF 33 PRACTICAL NURSING STUDENTS

April, 1958

Language Spoken	Raw Score	Language Spoken	Raw Score	Language Spoken	Raw Score
Laguna	148½	Crow	138	Choctaw	118½
Laguna	145½	Crow	138	Navajo	118½
Laguna	145½	Tewa	138	Navajo	115½
Sioux	145½	Tewa	135	Navajo	115½
Acoma	144½	Zuni	133½	Navajo	109½
Acoma	144	Zuni	133½	Navajo	109½
Taos	144	Apache	132	Apache	102
Zuni	144	Apache	127½	Apache	102
Acoma	141	Zuni	124½	Sioux	99
Blackfeet	141	Creek	124½	Navajo	97½
Arapahoe	139½	Alabama Coushatta	121½	Navajo	96

Mean = 127.4 S.D. = 18.6

Examination of the results of both groups' performance on this test shows that, by the raw score alone, many of these students were able to perform satisfactorily. However, the ability to function in the language was not as satisfactory as this test indicated. It is hypothesized that the test bridges less cultural difference when used with college students from European countries than it does with Indians of the Southwest. The experience background, the cultural heritage, and the basic thinking patterns of the foreign students may fit the middle-class Anglo life style more closely than do the background, heritage, and thinking of the Indians tested. The standard score acceptable for the foreign student would not necessarily be acceptable for the Indian student. In addition, even though the Indian makes a satisfactory score on this diagnostic test, it is possible that he lacks orientation to Anglo conceptualization in thinking and that he has not acquired the habit of demanding meaning when he uses English vocabulary either in reading or listening. Because of these generalizations, and because there were no norms available for elementary school pupils, the Diagnostic Test for Students of English as a Second Language was not used in further work in the Indian Research Study.

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[3] Test results were provided in April, 1958, by Margaret Knight, Home Economics Instructor, Practical Nurse Training School, Albuquerque Indian School, Albuquerque, New Mexico.

III. THE IDIOMS TEST

Idiomatic expressions, as they occur in elementary school readers, were selected as one of the facets of the English language in need of specific research. When bilingual children encounter idioms, they need to know the colloquial meanings. Even though idioms do not translate well literally, people who have limited knowledge of English tend to give them an exact literal translation. Since the reading textbooks used by Indian and Spanish-American children contain many English idioms, a study was designed to reveal difficulties which they have in understanding these expressions.[4] It was felt that such a study would furnish useful information for teachers of reading and language. McPherson says that idioms lead to wrong understandings until explained. She urges teachers to take nothing for granted, to see that every means possible is employed to explain idioms and to emphasize concrete experiences for children to help them learn a new language.[5]

Preparation of the Idioms Test

A multiple-choice idioms test of ninety items was prepared using selected idiomatic expressions found in commonly used elementary reading texts. Textbooks used included fourth, fifth, and sixth grade readers of the Ginn,[6] Row Peterson,[7] and Scott, Foresman[8] series. Sample items follow.[9] (See Appendix B for complete test.)

"Saved by a hair! Just by a hair!" yelled Tom.
  a. by using his head
  b. just barely made it
  c. safe and secure
  d. by sticking his head out.

"I leave it to you to break him in."
  a. break his habits
  b. to get him inside
  c. to hurt him
  d. get him used to things.

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[4] Maurine Dunn Yandell, "Some Difficulties Which Indian Children Encounter with Idioms in Reading" (unpublished Master's thesis, University of New Mexico, Albuquerque, 1959).

[5] Orpha McPherson, "Problems of the Bilingual Child," Indian Education November 1, 1956.

[6] David H. Russell, et al., Ginn Basic Readers (Boston:Ginn & Co.,1956).

[7] Mabel O'Donnell, The Alice and Jerry Basic Readers (Evanston: Row Peterson & Co., 1954 and 1956).

[8] William S. Gray, et al., Curriculum Foundation Series (Chicago: Scott, Foresman & Co., 1954 and 1955).

[9] O'Donnell, op. cit., Singing Wheels, Fourth Reader.

"He won't be worth his salt for a long time to come."
a. worth very much
b. worth as much as salt
c. worth what he eats
d. uses too much salt

"Before another year comes around, the cabins will begin to climb the hill."
a. cabins will be built higher
b. climb the hill to get to the cabins
c. cabins will be built on the hill
d. cabins will have to be moved.

The test was carefully edited and administered to a class of thirty-three university students enrolled in a professional education course in the teaching of reading. An approximate 90 per cent agreement on answers established validity.

Administration and Results of Testing

The idioms test was administered to 1,290 pupils in fourth, fifth, and sixth grades who were used as a norming group. These pupils, all children for whom English was a first language, were from Waterloo, Iowa, Albuquerque, New Mexico, and Gallup, New Mexico. The distribution of raw scores earned by these 1,290 pupils is presented in Table XVII. It may be assumed that the low scores were earned by pupils with low reading ability. However, there is an apparent upward trend in achievement from fourth to sixth grade. When medians, means, and standard deviations were computed, this growth from grade to grade was demonstrated. These results are given in Table XVIII, page 120.

The high mean score (67.12) with a relatively small standard deviation (11.05) for sixth grade suggests that this test may be a useful instrument for sixth grade teachers. Percentile ranks were established, based on cumulative totals of raw scores for each grade, and are shown in Table XIX, page 120.

TABLE XVII

DISTRIBUTION OF RAW SCORES ON THE IDIOMS TEST

NORMING GROUP

SPRING 1959

Raw Score	Fourth Grade N =376	Fifth Grade N=356	Sixth Grade N=558	Raw Score	Fourth Grade	Fifth Grade	Sixth Grade
90				45	8	4	2
89				44	6	6	0
88				43	6	3	3
87				42	2	0	2
86				41	3	1	0
85			1	40	3	2	4
84		2	2	39	1	2	2
83			2	38	2	3	1
82		1	7	37	5	3	1
81	1	2	7	36	4	1	2
80		4	17	35	3	3	0
79		5	13	34	4	1	1
78	2	8	15	33	3	1	0
77	2	6	25	32	7	1	1
76	6	11	35	31	2	3	4
75	3	11	25	30	1	2	1
74	2	11	25	29	2	0	0
73	2	9	31	28	5	1	0
72	11	15	28	27	3	3	4
71	11	16	31	26	3	0	0
70	12	11	29	25	4	2	2
69	9	13	24	24	2	2	
68	10	16	20	23	1	3	
67	15	8	26	22	2	1	
66	14	13	22	21	2	1	
65	11	14	17	20	3	1	2
64	17	15	14	19	2	1	1
63	9	15	16	18	1	1	
62	13	7	14	17	2	1	
61	6	10	12	16	1		
60	11	9	5	15	1		
59	9	5	6	14	1		
58	13	9	8	13			
57	13	8	6	12			
56	8	6	12	11			
55	9	7	4	10			
54	7	3	4	9			
53	8	3	3	8			
52	8	7	3	7			
51	4	0	4	6			
50	10	5	4	5			
49	7	6	5	4			
48	5	6	2	3			
47	10	5	0	2			
46	3	1	1	1			

TABLE XVIII

MEAN AND MEDIAN SCORES AND STANDARD DEVIATIONS BY GRADES ON THE IDIOMS TEST

SPRING 1959

Grade	Number	Median Score	Mean Score	Standard Deviation
4	376	58.90	54.38	15.00
5	356	64.00	60.91	14.34
6	558	70.00	67.12	11.05

TABLE XIX

PERCENTILE RANKS OF 1,290 FOURTH, FIFTH, AND SIXTH GRADE PUPILS ON THE IDIOMS TEST -- SPRING 1959

Percentile Rank	Fourth Grade Raw Score	Fifth Grade Raw Score	Sixth Grade Raw Score	Fourth Grade Cumulative Totals	Fifth Grade Cumulative Totals	Sixth Grade Cumulative Totals
99	81	84	84	376	356	558
90	71	76	79	338	320	499
80	67	72	76	301	285	443
75	66	71	75	282	267	416
70	64	70	74	263	249	388
60	62	67	72	226	214	332
50	58	64	70	188	178	277
40	54	61	68	150	142	222
30	49	57	65	113	107	166
25	46	54	64	94	89	139
20	43	49	62	75	71	111
10	31	39	54	38	36	55
5	25	30	42	19	18	28
4	22	27	39	15	14	22
3	20	24	32	11	11	17
2	19	23	27	8	7	11
1	17	20	25	4	4	6

After establishing norms, the Idioms Test was administered to the minority ethnic groups in selected schools in New Mexico. Yandell tested 164 Anglo, 224 Navajo, 52 Pueblo (Zuni), and 76 Spanish-American sixth graders in Gallup-McKinley County.[10] The test was later administered to 38 sixth-grade Jicarilla and Mescalero Apache children.[11] The performance on this test by ethnic groups is reported in Table XX below. The significant differences between the mean scores of each minority group and the norming group indicate the extreme degree to which these children are having difficulty with idioms in the English language. This table shows dramatically that Spanish-American, Navajo, Apache, and Pueblo sixth graders have a very poor understanding of the common idioms in school readers when compared to the norming group.

TABLE XX

STATISTICAL DIFFERENCES BETWEEN ETHNIC GROUPS AND NORMING GROUP ON THE IDIOMS TEST -- Spring 1959

Group	Number	Median	Mean	SD	SE_D	CR	Confidence Level
Sixth Grade Norming	558	70.00	67.12	11.05			
Anglo	164	68.00	63.88	13.62	1.14	2.84	.01
Spanish American	76	49.00	46.33	15.25	1.81	11.48	.01
Apache	38	34.00	36.58	15.74	2.59	10.26	.01
Navajo	224	30.00	31.23	13.23	.995	36.08	.01
Pueblo	52	39.00	37.38	15.27	2.18	16.46	.01

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[10] Yandell, *op. cit.*, p. 31.

[11] Jewel Baker, "A Comparative Study of Three Cultures, Anglo, Spanish American, and Indian, with Idioms, Proverbs, and Figures of Speech (unpublished research paper, University of New Mexico, Albuquerque, May, 1959).

To establish the reliability of the Idioms Test, the split-half method was used in conjunction with the Spearman-Brown prophecy formula. Randomly selecting small samples from each ethnic group, Yandell found extremely high positive correlations significant at the 1 per cent level for Anglo, Spanish-American, Navajo, and Pueblo (Zuni) groups as presented in Table XXI.[12]

TABLE XXI

CORRELATIONS OF TEST ITEMS BY SPLIT-HALF METHOD

IDIOMS TEST -- SPRING 1959

Group	Number	Means	Standard Deviations	Correlation	Level of Confidence
Anglo	20	34.2 24.25	5.02 5.03	.754	.01
Spanish American	10	23.0 22.6	8.39 8.34	.916	.01
Navajo	20	18.6 17.25	6.32 6.44	.912	.01
Pueblo	10	19.7 19.1	8.83 9.41	.906	.01

Percentile Ranks for Test Groups

In order to compare the relative positions of the different ethnic groups, raw scores were converted into percentiles. Table XXII shows the percentiles for the control Anglo groups of Albuquerque and Waterloo, as well as the sample group from Gallup-McKinley County. Table XXII is read as follows:[13] A raw score of 34 earned by a pupil in the Waterloo group

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[12] Yandell, *op. cit.*, p. 29.

[13] *Ibid.*, p. 31.

TABLE XXII

PERCENTILE EQUIVALENTS OF RAW SCORES EARNED BY ETHNIC GROUPS
SIXTH GRADE -- SPRING 1959

Percentile	Control Groups		Gallup-McKinley County				Total
	Waterloo N=153	Albuquerque N=237	Anglo N=164	Spanish American N=76	Pueblo N=52	Navajo N=224	N=516
99	84	84	82	78	74	64	81
90	79	78	77	66	58	48	72
80	76	76	75	62	52	43	65
75	76	75	74	60	46	40	63
70	75	74	73	58	43	38	59
60	73	72	70	52	41	33	50
50	71	71	68	49	39	30	43
40	69	69	65	44	34	26	36
30	68	66	62	38	28	23	31
25	67	65	61	34	26	22	27
20	65	62	57	32	24	21	26
10	57	55	45	25	17	17	20
05	50	45	31	21	14	16	17
02	38	39	25	20	12	13	14
01	34	31	20	18	10	12	12

ranked him at the 01 percentile for his group. The 01 percentile score for the Albuquerque group was 31; for the Gallup-McKinley County Anglo group, it was 20; for the Spanish-American group it was 18; for the Pueblo (Zuni) group it was 10; for the Navajo group it was 12; and for the total Gallup-McKinley County group it was 12.

To make a comparison between the groups in another way, the raw score of 65 falls at the 20th percentile in the Waterloo group, at the 25th percentile in the Albuquerque group, at the 40th percentile in the Gallup-McKinley Anglo group, above the 80th percentile in the Spanish-American Group, above the 90th percentile for the Pueblo (Zuni) group, and at the 99th percentile for the Navajo group.

Table XXII shows that the median score (49) earned by the Spanish-American pupils ranks at the 5th percentile in the Waterloo sample; the median score (39) earned by the Pueblo (Zuni) pupils ranks at the 2nd percentile in the Waterloo sample; and the median score (30) earned by Navajo pupils ranks below the 1st percentile in the Waterloo sample.

Comparison of Reading Level and Idioms Test

Average reading levels based on results of the Stanford Achievement Test were available for many pupils in Gallup-McKinley County schools. A sample was taken from the two larger ethnic groups--110 Anglos and 77 Navajos--and was restricted to pupils whose reading level was beginning fourth grade or above. If the sixth-grade pupil could not read at a level as high as 4.0, he was unquestionably having difficulties with reading without the involvement of the idiom. Of the Navajo pupils in the sixth grade from the schools used in this sample, 47 per cent were rejected because their average reading level on the Stanford Achievement test was below the grade level of 4.0. In contrast, only 5 per cent of the Anglo pupils were not included because they scored lower than 4.0 on reading. This difference has extreme significance for classroom teachers.

The reading level of individual pupils and their scores on the Idioms Test were paired, and a Pearson coefficient of correlation was computed. This determined the relationship between these two variables. Results are shown in Table XXIII.[14]

TABLE XXIII

COMPARISON OF READING LEVELS AND IDIOMS TEST SCORES GALLUP-MCKINLEY COUNTY SIXTH GRADE--SPRING 1959

Group	Number	Reading Level Mean	Standard Deviation	Idioms Test Mean	Standard Deviation	Correlation	Standard Error	Level of Confidence
Anglo	110	7.26	1.78	65.93	11.40	.721	.046	.01
Navajo	77	4.60	0.53	36.30	6.05	.941	.013	.01

A very high positive correlation was found between the reading levels and scores on the Idioms Test for both Anglo and Navajo pupils. The correlation for the Navajo was .941, significant at the 01 per cent level of confidence. The correlation for the Anglo pupils was also significant at the 01 per cent level. The mean reading grade level of the Anglo groups was 7.26 and that of the Navajo was 4.60; the mean on the Idioms Test of this sample was 65.93 for the Anglo and 37.30 for the Navajo. This test performance reveals a very close relationship between reading ability and understanding of idioms.

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[14] *Ibid*., p. 42.

IV. UNDERSTANDING MULTIPLE MEANINGS, ANALOGIES, AND OPPOSITES IN THE ENGLISH LANGUAGE

A. INTRODUCTION

Teachers may frequently assume that if their pupils recognize the words in a selection they have "read" it. However, for bilingual children, there are many aspects of understanding English that cause difficulty. Comprehension is here contrasted with "word-calling" in reading. In addition to idiomatic expressions, some of the facets of the language that can be isolated are multiple meanings, analogies, synonyms, antonymns, and homonyms. Three individual studies were undertaken in the same elementary schools to investigate the performance of different ethnic group children with multiple meanings, opposites, and analogies.[15,16,17] The purpose of these studies was to compare the efficiency of Indian and Spanish-American children in public school fourth and sixth grades with the performance of a norming group of selected fourth-grade Anglo pupils.

B. PROCEDURE

The same procedure was followed in the three separate studies. This procedure included:

1. Objective tests were prepared based upon English expressions found in reading textbooks which were no more difficult than fourth-grade

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[15] Stephen G. Hess, "A Comparative Study of the Understanding Which Bilingual Students have of the Multiple Meanings of English Words" (Research in progress, University of New Mexico, Albuquerque, 1960-61).

[16] Christine Dudding, "An Investigation into the Bilingual Child's Comprehension of Antonyms" (Research in Progress, University of New Mexico, Albuquerque, 1960-61).

[17] Veta W. Mercer, "The Efficiency of Bilingual Children in Understanding Analogies in the English Language" (unpublished Master's thesis, University of New Mexico, Albuquerque, 1960).

level. The multiple meanings and analogies tests were of the multiple-choice type. One part of the test on antonyms was column matching, while another part used completion statements in which the opposite needed was determined by context in sentences. Sample items of each test are given below. (See Appendix B for complete tests.)

Analogies. (Directions: Select the right answer.)

Water is to drink as bread is to	eat	bake	butter
Arm is to hand as leg is to	toes	foot	pants
Chair is to sit as floor is to	stand	carpet	sleep

Multiple Meanings. (Directions: Which one is not correct.)

1. a. It came in a plain package.
   b. The answer is plain to everyone.
   c. The plain wore off his new coat.
   d. The house was built on a high plain.

2. a. Don't hold me.
   b. Look in the hold of the ship.
   c. The cup can hold water.
   d. Your clothes are full of hold.

3. a. He hurt my left hand.
   b. There is nothing left.
   c. We put left in the pan.
   d. We left the city.

Antonyms.

A. Directions: Draw a line from the word in Column I to the word in Column II that means the opposite.

wide	enemy
friend	dark
light	narrow

B. Directions: Select and underline the word in each row that means the opposite of the first word.

there	place	open	here
kind	mean	good	woman

2. The tests were administered by classroom teachers to a selected sample of ninety-five fourth-grade children in the Albuquerque Public Schools. These children constituted the norming group.

3. The tests were administered by classroom teachers to fourth and sixth grade classes in selected public schools where Navajo, Apache, Pueblo, Spanish-American, and Anglo children were enrolled.

4. The performance of these fourth and sixth grade children was compared with the norming group to determine the extent to which Indian and Spanish-American children, as bilinguals, understand multiple meanings, analogies, and opposites in the English language.

5. Recommendations based on this performance were presented for teachers of reading.

C. ANALYSIS OF THE DATA

Data for each of the three tests are represented in statistical tables, indicating the number tested, the median and mean scores, the standard deviation, the standard error of the difference between means, and the critical ratio. Tables XXIV, XXVI, and XXVIII[18,19,20] present these results for the Multiple Meanings Test, the Antonyms Test, and the Analogies Test, respectively. The approximate percentile ranks of median scores compared with the norming group in Tables XXIV, XXVI, and XXVIII indicate the level of performance of the middle child in each sub-group compared to the norming group. For example, on the Multiple Meanings Test, the middle Navajo fourth grader ranked at only the 4th percentile when compared with the norming group.

Critical ratios show the significance of the difference in the performances of the norming group and of the ten sub-groups, and are presented in Tables XXV, XXVII, and XXIX.[21,22,23] Critical ratios were computed for mean score differences between each two groups. That is, just as the norming group was compared with the ten sub-groups, so were the ten sub-groups compared with each other.

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[18] Hess, op. cit. [19] Dudding, op. cit. [20] Mercer, op. cit., Appendix D.
[21] Hess, op. cit. [22] Dudding, op. cit. [23] Mercer, op. cit., Appendix D.

TABLE XXIV

RESULTS OF MULTIPLE MEANINGS TESTING AND COMPARISON WITH NORMING GROUP -- SPRING 1960

Group	Number	Median	Mean	Standard Deviation	Standard Error	Critical Ratio	Approximate Percentile Rank of Median Score Compared with Norming Group
Norming	95	56	52.85	8.45			
Navajo 4	30	28	28.35	6.00	1.40	17.50*	4
Navajo 6	26	37	35.70	12.20	2.54	6.73*	6
Apache 4	39	43	42.25	7.55	1.49	7.11*	10
Apache 6	52	48	44.85	10.00	1.63	4.91*	16
Pueblo 4	97	27	28.55	8.45	1.22	19.92*	4
Pueblo 6	71	36	36.40	10.80	1.55	10.61*	6
Sp-Am 4	78	45	41.55	12.75	1.68	6.73*	11
Sp-Am 6	92	49	46.55	10.45	1.39	4.53*	18
Anglo 4	79	54	50.40	9.25	1.35	1.81**	36
Anglo 6	93	56	54.65	5.50	1.04	1.73**	56

* Significant at .01 level ** Not significant

TABLE XXV

STATISTICAL SIGNIFICANCE OF THE DIFFERENCE BETWEEN GROUPS MULTIPLE MEANINGS TEST -- SPRING 1960

Group	Anglo 6	Anglo 4	Sp-Am 6	Sp-Am 4	Apache 6	Apache 4	Pueblo 6	Pueblo 4	Navajo 6	Navajo 4
Norming 4	1.73	1.81	4.53*	6.73*	4.91*	7.11*	10.61*	19.92*	6.73*	17.50*
Anglo 6		3.57*	6.59*	8.45*	6.53*	9.25*	13.04*	25.34*	7.70*	21.21*
Anglo 4			2.55**	4.98*	3.21*	5.13*	8.48*	16.19*	5.72*	14.60*
Sp-Am 6				2.76*	.97	2.64**	6.04*	12.95*	4.13*	11.74*
Sp-Am 4					1.65	.37	2.67*	7.74*	2.10**	7.29*
Apache 6						1.41	4.47*	10.00*	3.32*	9.32*
Apache 4							3.32*	9.26*	2.44**	8.53*
Pueblo 6								5.10*	.26	4.76*
Pueblo 4									2.81*	.14
Navajo 6										2.41**
Navajo 4										

*Significant at the .01 level **Significant at the .05 level

All others not significant

TABLE XXVI

RESULTS OF ANTONYMS TESTING AND COMPARISON WITH NORMING GROUP -- SPRING 1960

Group	Number	Median	Mean	Standard Deviation	Standard Error	Critical Ratio	Percentile Rank of Median Score Compared With Norming Group
Norming	98	57	55.51	6.95			
Anglo 4[a]	79	56	52.92	8.15	1.15	2.25**	49
Anglo 6[b]	39	58	57.36	2.19	.78	2.37**	75
Anglo 6[a]	102	57	55.70	4.43	.83	.22***	50
Sp-Am 6[b]	52	56	52.50	8.56	1.38	2.18**	27
Sp-Am 6[a]	96	55	50.90	9.65	1.21	3.80*	49
Sp-Am 4[a]	76	54	47.81	11.85	1.53	5.03*	22
Apache 6	50	52	51.90	6.79	1.19	3.03*	22
Apache 4	40	50	46.85	11.65	1.97	4.63*	7
Navajo 6	34	51	48.30	9.63	1.79	4.02*	8
Navajo 4	42	34	34.20	12.58	2.06	10.34*	3
Pueblo 6	75	46	45.29	10.34	1.38	7.39*	4
Pueblo 4	97	40	36.49	12.64	1.46	13.02*	3

[a] Rural *Significant at .01 level ***Not Significant

[b] Urban **Significant at .05 level

TABLE XXVII

STATISTICAL SIGNIFICANCE OF THE DIFFERENCE BETWEEN GROUPS -- ANTONYMS TEST -- SPRING 1960

Group	Anglo 4[a]	Anglo 6[b]	Anglo 6[a]	Sp-Am 6[b]	Sp-Am 6[a]	Sp-Am 4[a]	Apache 6	Apache 4	Navajo 6	Navajo 4	Pueblo 6	Pueblo 4
Norming	2.25**	2.37**	.22	2.18**	3.80*	5.03*	3.03*	4.63*	4.02*	10.34*	7.39*	13.02*
Anglo 4[a]		4.53*	2.72**	.28	1.49	3.11*	.77	2.89*	2.44**	8.70*	5.08*	10.39*
Anglo 6[b]			2.98*	3.91*	6.21*	6.82*	5.35*	5.62*	5.36*	11.75*	12.07*	16.05*
Anglo 6[a]				2.51**	4.44*	5.51*	3.61*	4.68*	4.32*	10.80*	8.19*	14.12*
Sp-Am 6[b]					1.03	2.60**	.39	2.58**	2.05**	8.07*	3.69*	9.48*
Sp-Am 6[a]						1.83	.73	1.93	1.35	7.66*	3.64*	8.89*
Sp-Am 4[a]							1.86	.42	1.82	5.74*	1.39	6.05*
Apache 6								2.42**	1.88	8.15*	4.32*	9.63*
Apache 4									5.87*	4.68*	.71	4.64*
Navajo 6										5.52*	1.42	5.65*
Navajo 4											4.86*	.98
Pueblo 6												5.02*
Pueblo 4												

[a] Rural *Significant at the .01 level

[b] Urban **Significant at the .05 level

All others not significant

TABLE XXVIII

RESULTS OF ANALOGIES TESTING AND COMPARISON WITH NORMING GROUP -- SPRING 1960

Group	Number	Median	Mean	Standard Deviation	Standard Error	Critical Ratio	Percentile Rank of Median Score Compared With Norming Group
Norming	95	60	58.43	9.35			
Navajo 4	30	35	36.13	7.32	1.61	13.85*	4
Navajo 6	23	45	45.35	8.85	2.06	6.35*	8
Apache 4	15	50	49.13	7.04	2.03	4.58*	20
Apache 6	34	55	54.06	9.40	1.85	2.36**	30
Pueblo 4	67	35	36.03	7.19	1.26	17.77*	3
Pueblo 6	74	46	46.74	9.74	1.45	8.07*	10
Sp-Am 4	80	49	48.25	10.77	1.50	6.79*	12
Sp-Am 6	76	51	50.88	10.98	1.55	4.87*	20
Anglo 4	75	57	55.43	10.21	1.48	2.03**	40
Anglo 6	95	60	59.41	7.87	1.21	.81***	50

*Significant at .01 level **Significant at .05 level ***Not Significant

TABLE XXIX

STATISTICAL SIGNIFICANCE OF THE DIFFERENCE BETWEEN TWO GROUPS ANALOGIES TEST -- SPRING 1960

Group	Navajo 4	Navajo 6	Apache 4	Apache 6	Pueblo 4	Pueblo 6	Sp-Am 4	Sp-Am 6	Anglo 4	Anglo 6
Norming	13.52*	6.29*	4.51*	2.34**	17.23*	7.90*	6.61*	4.78*	1.97	.78
Navajo 4		4.04*	5.75*	8.58*	.06	6.06*	6.73*	8.02*	11.05*	14.83*
Navajo 6			1.46	3.56*	4.55*	.64	1.32	2.47	4.60*	6.96*
Apache 4				2.04**	6.49*	1.12	.40	.79	3.00*	5.17*
Apache 6					9.85*	3.72*	2.89*	1.56	.69	.37
Pueblo 4						7.49*	8.20*	9.71*	13.27*	19.48*
Pueblo 6							.92	2.45*	5.33*	9.12*
Sp-Am 4								1.51	4.33*	7.70*
Sp-Am 6									2.63*	5.69*
Anglo 4										2.78*
Anglo 6										

*Significant at .01 level **Significant at .05 level

All others not significant

D. CONCLUSION

The Multiple Meanings Test

The analysis of results of the Multiple Meanings Test, as administered to a norming group of 95 Anglo fourth-grade pupils in Albuquerque and to an experimental group of 657 fourth and sixth grade children in selected rural schools in New Mexico, yields the following information:

1. There is a difference which is statistically significant at the 01 per cent level of confidence between the means obtained on the Multiple Meanings Test for the norming group and each ethnic group, except for the Anglo fourth and sixth graders, where there is no significant difference between the means.

2. An examination of the mean scores obtained in testing the norming and sample groups shows an understanding of the multiple meanings of words, as measured by this test, according to the following rank order:

(a) Anglo 6th
(b) Norming
(c) Anglo 4th
(d) Spanish American 6th
(e) Apache 6th
(f) Apache 4th
(g) Spanish American 4th
(h) Pueblo 6th
(i) Navajo 6th
(j) Pueblo 4th
(k) Navajo 4th

3. The Navajo and Pueblo fourth graders, between whose means there is no statistically significant difference, have the least understanding of the multiple meanings of commonly used words.

4. The Navajo and Pueblo sixth graders, between whose means there is no statistically significant difference, have a poorer understanding of these meanings than any of the other sixth-grade groups, poorer even than three of the fourth-grade groups--Anglo, Spanish American, and Apache.

5. Within the sample studied, the difference between fourth and sixth grade mean scores for each ethnic group is statistically significant

at the 01 per cent level of confidence for the Anglos, Spanish Americans, and Pueblos; significant between the Navajo fourth and sixth graders at the 05 per cent level; but not significant between Apache fourth and sixth graders.

6. There is no statistical significance in the difference between the means of the Albuquerque Anglo norming group and the rural Anglo test group.

7. All the groups sampled except the Anglo fourth and sixth graders fall below 20, on an average, in a percentile rank comparison with the norming group.

The Analogies Test

The analysis of the test results of the Analogies Test, when administered to a norming group of ninety-five Anglo fourth-grade pupils in Albuquerque and an experimental group of 569 fourth and sixth grade children in selected rural schools, yields the following information:

1. There is a significant difference between the means obtained on the Analogies Test for the control group and for each ethnic group except between the means of the Anglo sixth and the Anglo fourth grade groups.

2. The ethnic groups understand analogies, as measured by this test, in this order:

(a) Anglo 6th
(b) Anglo 4th
(c) Apache 6th
(d) Spanish American 6th
(e) Apache 4th
(f) Spanish American 4th
(g) Pueblo 6th
(h) Navajo 6th
(i) Navajo 4th
(j) Pueblo 4th

3. The Pueblo fourth-grade Indian child understands analogies least of all the fourth-grade ethnic groups tested.

4. The Navajo sixth-grade Indian child understands analogies least of all the sixth-grade ethnic groups tested.

5. The difference in the performance between Navajos and Pueblos is not statistically significant.

6. The difference in the performance between Spanish Americans and Apaches is not statistically significant.

7. The difference in the performance between Anglos in and out of Albuquerque is not statistically significant.

8. The difference in the performance between Navajo fourth and Navajo sixth graders is statistically significant at the 01 per cent level of confidence.

9. The difference in the performance between Apache fourth and Apache sixth graders is statistically significant at the 05 per cent level of confidence.

10. The difference in the performance between Pueblo fourth and Pueblo sixth graders is statistically significant at the 01 per cent level of confidence.

11. The difference in the performance between Spanish American fourth and Spanish American sixth graders is not statistically significant.

12. The difference in the performance between Anglo fourth and Anglo sixth graders is statistically significant at the 01 per cent level of confidence.

13. The Pueblo fourth and the Navajo fourth graders fall in the 3rd and 4th percentiles, respectively, when compared with the norms in this study.

The Antonyms Test

Results of the Antonyms Test, given to a norming group of 98 urban fourth graders, 102 partially bilingual rural sixth graders, and 680 fourth and sixth graders in selected rural schools in New Mexico, reveal the following information:

1. A difference, statistically significant at the 01 per cent level of confidence, between the means obtained on the Antonyms Test exists between the norming group and eight of the twelve ethnic groups tested. There is a statistically significant difference at the 05 per cent level of confidence between the means of the norming group and the means of three of the four remaining groups: rural Anglo fourth, Anglo sixth, and urban Spanish-American sixth. There is no significant difference between the means of the norming group and the rural Anglo sixth.

2. An indication of the degree of comprehension of antonyms, as measured by this test, is disclosed by the mean scores of the norming and sample groups arranged in rank order of performance:

(a) Urban Anglo 6th
(b) Rural Anglo 6th
(c) Norming group
(d) Rural Anglo 4th
(e) Urban Spanish-American 6th
(f) Apache 6th
(g) Rural Spanish American 6th
(h) Navajo 6th
(i) Rural Spanish American 4th
(j) Apache 4th
(k) Pueblo 6th
(l) Pueblo 4th
(m) Navajo 4th

3. Examination of the difference between the means of the Navajo and Pueblo fourth graders indicates that these children comprehand antonyms least of all the groups.

4. The Navajo and Pueblo sixth graders, between whose means there is no significant difference, indicate less understanding of antonyms than any grade group tested, even less than two of the fourth-grade groups, rural Anglo and norming group.

5. The difference between fourth and sixth grade mean scores of ethnic groups is statistically significant at the 01 per cent level of confidence for the rural Anglo fourth and urban Anglo sixth graders, Navajo

fourth and sixth graders, and Pueblo fourth and sixth graders; significant at the 05 per cent level of confidence for the rural Anglo fourth and sixth graders, rural Spanish-American fourth and urban Spanish-American sixth graders, and Apache fourth and sixth graders. The difference between rural Spanish-American fourth and sixth graders is not significant.

6. A comparison of the critical ratios between the Albuquerque norming group's mean and the means of the three other Anglo groups tested shows a statistically significant difference at the 05 per cent level of confidence between this group and both rural Anglo fourth and urban Anglo sixth graders. There is no statistically significant difference between the means of the norming group and rural Anglo sixth grade.

7. All the groups, with the exception of rural Anglo fourth and sixth, urban Anglo sixth, and rural Spanish-American sixth, fall below the 30th percentile when compared to the norming group; and only one group, urban Anglo sixth, exceeds the norming group in median score.

V. SUMMARY

This chapter has presented empirical data to substantiate the hypothesis that one of the most pressing problems in elementary education in New Mexico is that of teaching English as a second language.

Results of an exploratory test of common English idiomatic expressions obtained in the Indian Research Study reveal that Anglo sixth graders performed statistically significantly better than did Navajo, Pueblo, and Apache Indian and Spanish-American pupils. In the sample populations tested, the median scores for Navajos, Pueblos, and Spanish Americans were at the first, second, and fifth percentiles respectively for an Anglo norming group.[24]

---

[24] Yandell, op. cit.

A fourth-grade Anglo norming group performed statistically significantly better on exploratory tests of multiple meanings of commonly used words, analogies, and antonyms, than did either fourth or sixth grade Navajos, Apaches, Pueblo Indians, and Spanish Americans. All critical ratios were significant in this testing.[25,26,27]

These objective tests show clearly that a problem exists in the use of English by children from minority ethnic groups. Tests patterned after these exploratory measures could be used in schools wherever children who use English as a second language are enrolled. Dissemination of this specific research is needed to develop awareness on the part of public school personnel with the extent of the problem. Teachers who have not experienced bilingual problems themselves are apt to fail to grasp the significance of the language handicap.

As Mahlerbe has pointed out, there are many stages of bilingual ability ranging all the way from knowing only a very few isolated words in the second language to a stage of equilingualism--being equally proficient in two languages.[28] Exploratory testing in New Mexico's schools poses two problems with respect to bilingualism: (1) Are children from Indian and Spanish-American backgrounds functioning at a "low" stage of knowing English as defined by Mahlerbe, and hence giving only a superficial appearance of "knowing the language," or (2) in their attempt to be bilingual and to use a minimum of vocabulary in two languages without much ability to read or write either of them, do these pupils function on a very low level of equilingualism?

Answers are needed for these questions.

---

[25] Hess, op. cit. [26] Dudding, op. cit. [27] Mercer, op. cit.

[28] E. G. Malherbe, The Bilingual School (London: Longmans, Green and Co., 1946).

THE INDIAN RESEARCH STUDY

FINAL REPORT
SECTION II

Miles V. Zintz, Director

College of Education
The University of New Mexico
Albuquerque

1957-1960

SECTION II OF TWO SECTIONS

THE INDIAN RESEARCH STUDY

THE ADJUSTMENT OF INDIAN AND NON-INDIAN CHILDREN IN THE PUBLIC SCHOOLS OF NEW MEXICO

Miles V. Zintz, Director

FINAL REPORT

SECTION II

Sponsored Under Grant-In-Aid from the
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1957-1960

College of Education
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Albuquerque

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CHAPTER VIII

THE TEACHING OF READING IN SELECTED FIFTH GRADES

I. INTRODUCTION

On the basis of the testing programs reported in Chapter V and observation in the classrooms of the pilot schools, one area selected for special study was that of remedial reading instruction. The grade placement scores earned on the Gilmore Oral Reading Test[1] had indicated serious educational retardation. It was felt that a remedial teaching program for the fifth grades in selected schools might begin to counteract the tendency for successive grades to fall farther and farther behind grade placement. The purpose of this program, therefore, was to find ways to bring fifth graders closer to grade level in reading performance.

The procedures used in the study of reading improvement were:

1. To test a large sample of fifth-grade pupils at the beginning and at the end of the year;
2. To confer with the teachers;
3. To recommend
    a. grouping within the classes
    b. using teachers manuals that accompany readers
    c. finding easy reading materials to use throughout the school day
    d. using audio-visual aids to promote development of the English language arts.

---

[1] John V. Gilmore, Gilmore Oral Reading Test, Form A (Yonkers-on-Hudson: World Book Company, 1952.)

The fifth-grade population in this reading program is the same as reported in Chapter IX by Charles (see Table XXXVII, page 171).

II. PROCEDURES

Testing Program

In a pre-school seminar with eleven selected fifth-grade teachers, a testing program was planned for the school year. This testing program included:

1. The Gates Reading Survey[2] was to be administered during the first two weeks of school in September, 1959.

2. A test of knowledge of common English idioms was to be administered for experimental purposes. This test is described in detail in Chapter VII.

3. McKee's Inventory of Phonetic Skills[3] was to be administered late in the fall.

4. Other tests were to be considered if fall testing showed unanticipated needs.

5. A second form of the Gates Reading Survey[4] was to be administered in May, 1960, at the end of the school year.

Saturday Workshops

On the third Saturday of each month, these eleven selected teachers attended a meeting on the University of New Mexico campus to discuss the problems which they faced in teaching reading in their respective classrooms. Programs for the Saturday workshops included:

---

[2] Arthur I. Gates, Gates Reading Survey, Form 3 (New York: Teachers College, Columbia University, 1958).

[3] McKee Inventory of Phonetic Skill, Test Three (Boston: Houghton Mifflin Company, undated).

[4] Gates, op. cit., Form 1.

1. A study of the cultural differences. Lectures were given that conveyed much of the information presented in this report in Chapters II and III.
2. The teaching of reading from a series of readers. Lectures and demonstrations of materials conveyed information concerning grouping, following the teachers manuals for readers, using time for vocabulary building, teaching phonetic and structural analysis, and emphasizing oral reading.
3. Specific suggestions for teaching English as a second language.

Visits to Schools

At the time of the pre-school workshop, it was anticipated that each fifth-grade teacher would be visited by one member of the research study staff in his classroom once during each month. Thus, between each two visits to the campus for a Saturday workshop, each teacher could expect one visit to his classroom by the staff. These visits afforded opportunity for observing children working at appropriate reader levels in reading texts, recommending sub-grouping with sufficiently easy books, and pointing up difficulties with vocabulary.

III. RESULTS OF THE INITIAL TESTING PROGRAM

Gates Reading Survey

During the first two weeks of school, the Gates Reading Survey Test was administered to 261 fifth graders in seven pilot schools.[5] A frequency distribution of grade scores is shown in Table XXX. The median score for this total group was 3.3. Only twenty-one students scored above 5.0, grade placement of the class.

---

[5] The research study staff is indebted to Edabeth Rook, who held an assistantship in the research study during the fall, 1959, for administering and scoring the fall tests.

TABLE XXX

GRADE PLACEMENT SCORES EARNED BY 261 FIFTH GRADERS
GATES READING SURVEY, FORM 3
SEPTEMBER, 1959

Grade Placement	Frequency	Grade Placement	Frequency	Grade Placement	Frequency
7.9	1	5.9	0	3.9	12
7.8	0	5.8	1	3.8	7
7.7	0	5.7	2	3.7	13
7.6	0	5.6	0	3.6	7
7.5	0	5.5	3	3.5	14
7.4	0	5.4	3	3.4	12
7.3	0	5.3	0	3.3	16
7.2	0	5.2	4	3.2	8
7.1	0	5.1	3	3.1	5
7.0	0	5.0	0	3.0	9
6.9	0	4.9	2	2.9	10
6.8	1	4.8	1	2.8	10
6.7	0	4.7	5	2.7	11
6.6	1	4.6	5	2.6	20
6.5	0	4.5	3	2.5	16
6.4	0	4.4	5	2.4	17
6.3	0	4.3	4	2.3	7
6.2	0	4.2	3	2.2	3
6.1	0	4.1	10	2.1	1
6.0	2	4.0	3	2.0	1

The median score of 3.3 represents a reading retardation of almost two years. The test used was a survey test for third through tenth grades. Ninety-six pupils scored below the third-grade norm, and it was suspected that the test may have been too difficult to test more than one-third of the group. This had important ramifications for further testing to measure progress.

Idioms Test

This test is described in Chapter VII. It is recognized that level of reading ability made considerable difference in children's ability to respond to this test. The test itself was used to determine children's ability to understand common idioms in school readers. Examples of idioms used in the test are "Let the cat out of the bag," "Piece out the supper," and "Pull himself up by his own bootstraps." A copy of the complete test may be found in Appendix B.

There were 260 fifth graders who took this test, and their performance is summarized by ethnic groups in Table XXXI. Compared with a norming group of non-Indians tested at the end of fourth grade (grade placement 4.9), it can be seen that the norming group did statistically significantly better.

TABLE XXXI

STATISTICAL SUMMARY OF PERFORMANCE OF 260 FIFTH GRADERS
BY ETHNIC GROUPS ON THE IDIOMS TEST — FALL 1959

Group	Number	Median Score	Mean Score	Standard Deviation	Difference Between Means*
Norming-End of 4th Grade	376	58.00	54.38	15.00	
Anglo	30	34.00	35.57	13.84	18.81
Spanish American	41	20.00	20.68	10.89	33.70
Apache	59	10.00	11.34	7.07	43.04
Navajo	40	20.00	20.68	11.29	33.70
Pueblo	90	13.50	15.06	9.67	39.32

*Significant beyond .01 level.

The distribution of raw scores made by 260 fifth-grade pupils in the pilot schools tested at the beginning of the year and 376 fourth-grade pupils tested at the end of the year (norming group) on the Idioms Test is presented in Table XXXIII, page 144.

McKee Inventory of Phonetic Skills

The McKee Inventory of Phonetic Skills, Level Three, was administered by the classroom teachers during December, 1959, and January, 1960. A total of 215 fifth graders completed the Inventory. No norms are available for this test since pupils at the end of grade three are expected to answer most of the 130 items on the test correctly. Auditory discrimination of the following phonetic and structural elements are tested: initial consonant and consonant blend sounds, final consonant sounds, vowel sounds, prefixes and suffixes, and common syllables.

Table XXXII presents a frequency distribution of scores on this test. The median score of 107 shows that these fifth graders averaged 23 errors. A first quartile score of 88 shows that more than 50 pupils had

TABLE XXXII

FREQUENCY DISTRIBUTION OF 215 SELECTED FIFTH GRADERS
MCKEE INVENTORY OF PHONETIC SKILLS, LEVEL THREE

DECEMBER 1959--JANUARY 1960

Interval	Frequency	Interval	Frequency	Interval	Frequency
126-130	10	91-95	10	61-65	4
121-125	17	86-90	7	56-60	4
116-120	36	81-85	4	51-55	11
111-115	25	76-80	4	46-50	12
106-110	31	71-75	3	41-45	3
101-105	16	66-70	0	Below 40	5
96-100	13				

Perfect Score	Third Quartile	Median	First Quartile
130	117	107	88

TABLE XXXIII

DISTRIBUTION OF RAW SCORES MADE BY 376 FOURTH GRADERS IN NORMING GROUP AND 260 FIFTH GRADERS IN PILOT SCHOOLS ON THE IDIOMS TEST -- SPRING 1959

RAW SCORE	FOURTH GRADE NORMING GROUP GRADE PLACEMENT 4.9 N = 376	FIFTH GRADE PUPILS CATEGORIZED BY ETHNIC GROUP - GRADE PLACEMENT 5.0 - N=260				
		ANGLO N=30	SPANISH AMERICAN N=41	APACHE N=59	NAVAJO N=40	PUEBLO N=90
90						
89						
88						
87						
86						
85						
84						
83						
82						
81	1					
80	1					
79						
78	2					
77	2					
76	6					
75	3					
74	2					
73	2	1				
72	11					
71	11					
70	12					
69	9					
68	10					
67	15					
66	14					1
65	11					
64	17					
63	9					
62	13				1	
61	6					
60	11					
59	9					
58	13					
57	13	1				
56	8	1				
55	9					
54	7					
53	8					
52	8	2			1	
51	4	1				
50	10		1			
49	7					
48	5	1				
47	10					
46	3					
45	8	1				
44	6		1			1
43	5				1	
42	2					
41	3	3				
40	3		2			
39	1					
38	2					
37	5	1	1			1
36	4	2				
35	3					1
34	4	2				
33	3		2			
32	7	1		1		1
31	2	1				
30	1	1				
29	2		1			
28	5	1			2	1
27	3				3	1
26	3	2	1		2	
25	4	1	4	1	2	4
24	2	1	1	2	3	1
23	1		2			3
22	2	1	3	5	1	4
21	2	1			3	1
20	3	1	2		3	3
19	2	1	1	1		3
18	1		3	2	1	1
17	2		1	1		4
16	1	1	1	2	3	2
15	1		1	2	1	7
14	1			1		5
13		1	1	5	1	6
12			1	3	2	2
11			3	3	1	1
10			3	4	6	7
9			2	2	1	8
8				1	2	4
7				3		3
6			2	6		6
5				6		4
4				2		
3				3		1
2						2
1			1	1		1
0				2		

considerable difficulty with phonetic and structural analysis skills which are usually taught by the end of third grade. The predominance of errors for all classes was in the section on vowel sounds. The section with the second greatest percentage of errors was that which tested recognition of initial consonaht and consonant blend sounds.

IV. ANALYSIS OF FINAL TEST RESULTS

The Gates Reading Survey Test, Form 1, was administered in May, 1960, to 252 fifth graders. The median score was 3.9 (see Table XXXIV).

TABLE XXXIV

GRADE PLACEMENT SCORES EARNED BY 252 FIFTH GRADERS
GATES READING SURVEY, FORM 1
MAY, 1960

Grade Placement	Frequency	Grade Placement	Frequency	Grade Placement	Frequency
7.9	0	5.9	2	3.9	7
7.8	1	5.8	8	3.8	6
7.7	1	5.7	3	3.7	8
7.6	0	5.6	5	3.6	14
7.5	1	5.5	2	3.5	7
7.4	0	5.4	2	3.4	11
7.3	1	5.3	3	3.3	5
7.2	1	5.2	5	3.2	6
7.1	1	5.1	9	3.1	9
7.0	3	5.0	6	3.0	8
6.9	1	4.9	6	2.9	9
6.8	0	4.8	10	2.8	12
6.7	1	4.7	5	2.7	3
6.6	0	4.6	6	2.6	4
6.5	2	4.5	4	2.5	10
6.4	0	4.4	6	2.4	3
6.3	2	4.3	5	2.3	4
6.2	1	4.2	3	2.2	1
6.1	3	4.1	7	2.1	0
6.0	2	4.0	6	2.0	1

A growth of six months in the total group when all children who took the test are included is represented by the median score of 3.9. A further analysis has been made of scores for those 230 children who took both the pre-test and the post-test. These results indicate mean gains of one full year in three of the classes. The lowest gain for any class was one-half year. (See Table XXXV.)

TABLE XXXV

SUMMARY OF FALL AND SPRING TEST RESULTS

GATES READING SURVEY TEST

School	Number of Students	Median Form 3 Sept. 1959	Median Form 1 May 1960	Median Gain	Mean Gain
A	32	3.3	4.1	0.8	0.95
B	33	3.9	4.8	0.9	0.95
C	18	3.8	4.9	1.1	0.78
D	25	3.4	4.55	1.15	0.9
E	70	3.15	3.6	0.45	0.6
F	31	3.4	3.8	0.4	0.6
G	21	3.3	3.6	0.3	0.45

Gains of one year are expected in normal classes. In light of evidence regarding progressive retardation, however, the gains achieved by the sample were greater than those anticipated for similar groups not subjected to the techniques that were employed in this program.

V. TECHNIQUES GIVEN GREATEST EMPHASIS

The following techniques were discussed, evaluated, and applied by the teachers of the pilot schools and the staff of the Indian Research Study during the Saturday workshops and classroom visits:

1. Testing reading levels to make sure that children are assigned books of sufficiently easy level of reading. Methods for examining to find the instructional level of reading were discussed.

2. Measuring sight vocabularies of individual children with the Dolch Basic Sight Word Test of 220 service words.[6]

3. Teaching phonetic and structural analysis skills.

4. Giving more emphasis than is usually recommended to oral reading.

5. Teaching specific types of language exercises for bilingual pupils. Examples of such exercises follow.

   a. Providing for drill in the use of all the different forms of common verbs--oral drills, variety of verb forms used over and over, and simple statements (declarative form) before question forms.

   b. Identifying root words, prefixes, and suffixes in structural analysis.

   c. Testing children's ability to match word meaning and word form. The following sentences were written by fifth-grade pupils after oral reading of a story which had presented no pronunciation difficulties:

      "The bird makes a honest."
      "I guilty wash my dishes and then I watch TV."
      "I just had an examining."
      "The ashamed means trouble of our self."

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[6] Edward W. Dolch, The Basic Sight Word Test (Champaign: The Garrard Press, 1942).

d. Teaching multiple meanings of the same word. A popular elementary school dictionary[7] shows seventy-five different uses of the word run, e.g., "to run a race; to run a garage; a run on a bank; a run in a stocking; not the common run of persons." The following illustrative exercise shows how one teacher encouraged her class to think of many meanings of the same word:

> The word track was being discussed in the classroom in connection with a story regarding street cars. Some of the children had never seen a street car, and so Bill, a city boy, said that they were cars that ran by electricity on tracks. When asked to describe what a track looked like, he said that it was a long steel thing that ran in two lines down the middle of the street. John, the "desert rat," with a puzzled look on his face, wanted to know what kind of tracks the car made. We got to talking about the words that looked the same, but meant different things, and it was suggested that each child tell what the word track meant to him.
>
> Sharon said that many times her mother told her not to track up the clean kitchen floor. To her it meant to get something dirty. Melinda mentioned that she had heard her father discuss the sound track of his tape recorder. Steve contributed the fact that his father tracked a missile on a tracking board. Peter mentioned the new race track outside El Paso. Jon told of riding on a train which ran on tracks and how the wheels made a clicking sound as they went over the joints in the tracks. John told of the time he had found coyote tracks in the snow and had tracked them to the boundary lines of the Post. Bruce, the slow-poke of the class, said that his mother had told him to make tracks for school that morning. "She meant me to hurry up," he said by way of explanation.
>
> By the time we were through, we had collected quite a few meanings for the word track and had learned a lesson in word comprehension. For, as one child expressed it, "You have to know what you are reading about to know what the word means."

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[7] E.L. Thorndike and Clarence L. Barnhart, Thorndike-Barnhart Advanced Junior Dictionary (Chicago: Scott, Foresman and Company, 1957), pp. 703-704.

[8] Marjorie F. Day, primary teacher, White Sands Missile Range, New Mexico.

e. Understanding the idiom in the English language, such as:

"Mother will piece out the supper."
"His plan fell through."
"Now I've let the cat out of the bag."

f. Understanding commonly used slang expressions, such as:

"Mr. Jones really cramps my style."
"Tom likes to pull your leg every chance he gets."

g. Utilizing exercises such as the following to help children see the relationships involved in simple analogies:

"Cold is to ice as hot is to   fire   burn   careful
"Chair is to sit as floor is to   stand   carpet   sleep

h. Comprehending sentence meaning by:

(1) Re-arranging word order in sentences.

(2) Recognizing sequence of ideas within a sentence.

(3) Deriving word meanings from context.

(4) Comprehending simple definitions of meaning in light of a given context.

i. Interpreting figurative language.

VI. SUGGESTIONS MADE AT FINAL WORKSHOP MEETING

At the last workshop of the school year, the fifth-grade teachers made evaluative statements about the program. Their suggestions follow:

1. One teacher wrote that "Participation in this study has reinforced my feeling of the need for:

    1. Enlarging vocabulary, oral and written;
    2. Giving real or contrived experiences;
    3. Dramatization of situations for understanding of reading or arithmetic;
    4. Staying with the desired learnings until they are fixed."

2. One teacher found that, by using filmstrips, he had an excellent oral reading situation. Allowing children to volunteer to be the narrator stimulated many to do good oral reading.

3. Where children tended to look at the end of the word first or find family names and then back up to get the word, one teacher tried teaching beginning consonant-vowel combinations as beginning sounds: ha-s, ha-m, ha-d, ha-t (Anna Cordts Method).

4. Much good oral language was stimulated by one teacher who selected action pictures from magazines and mounted them on oaktag. Advertisements in _McCalls_ and _Ladies Home Journal_ were recommended. The Vinyl Floor Covering advertisement where the boy brought his dog into the house with muddy feet was especially successful. Children were asked to make stories about the pictures. They were asked what happened before, what is happening now, and what will likely happen next.

5. Another teacher used many pictures from magazines to build a large picture dictionary. This included action pictures to illustrate many parts of speech.

6. Use of the Viewmaster was recommended by several teachers. Obtaining a small library of pictures to be viewed over and over by the pupils was worthwhile.

7. Use of the Science Research Associates Reading Laboratory (Elementary Level)[9] was recommended by teachers in one school. This set contains many exercises for both speed and comprehension beginning at second-grade level.

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[9] Don H. Parker, _et al_. _SRA Reading Laboratory_, _Elementary Edition_. Chicago: Science Research Associates, Inc., 1959.

7. One teacher indicated that he expects to make more use of the *Readers's Digest Skill Builders*[10] next year.

8. A set of twenty charts for teaching phonetic and structural analysis skills were recommended.[11]

9. Another teacher found *Learning the Letter Sounds* and its teachers manual[12] very useful. This teacher felt this book was useful even in the fifth grade if the child needed this help.

10. One teacher indicated that she had made provision for much oral reading. Oral reading was specifically planned in every subject. Children in a group reading together made possible work on specific vocabulary and allowed for work on word analysis whenever trouble arose.

11. Several teachers strongly recommended the use of the *Weekly Reader*.[13] Students look upon the *Weekly Reader* as adult news and are motivated to want to read it well. One teacher created pretend TV and radio programs based on *Weekly Reader* stories. Several teachers felt that the slow group volunteered successfully in *Weekly Reader* lessons after observing other pupils.

12. Working crossword puzzles and translating codes provided motivation in other classrooms. A crossword puzzle in the *Weekly Reader* was useful.

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[10] Guy Wagner, *Reader's Digest Skill Builders* (New York: Reader's Digest Educational Service, 1949).

[11] *Horrocks-Norwick Word Study Charts* (Boston: Ginn and Co., 1948).

[12] Paul McKee and Lucille Harrison, *Learning the Letter Sounds* (Boston: Houghton-Mifflin, 1937).

[13] *My Weekly Reader* (Columbus, Ohio: American Education Publications).

13. Stress on oral language has indirectly helped reading ability. One teacher felt that this stress gives better word meanings and story analysis. This oral language included: proper methods of introducing, telephone conversations, telling why a story was enjoyed, re-telling sequence of events in a story, and recommending easy, interesting books to read.

14. The Montgomery Ward Catalog was a real help to several teachers. It was used to teach names of all kinds of tools in one fifth grade. It was used to teach use of index and to learn elementary dictionary skills in another. It can be used to teach a great deal of practical arithmetic and to develop vocabulary.

15. Teachers felt that problem solving in arithmetic must be approached as a reading lesson. Children followed the following steps to improve both problem-solving skill and computational abilities:

a. Analyze problems both with and without number;
b. Do not use any "cue" words that always tell what to do;
c. Establish understanding of what is asked;
d. Estimate the answer;
e. Check reasonableness.

All teachers agreed that it is better to take time to do three problems with understanding than to hurry through with the teacher working all the problems on a whole page. Some teachers strongly recommended having the children make up story problems.

16. Another teacher recommended having pupils write little paragraphs using the weekly spelling words. The he asked them to read back orally what they had written. Such grammatical mistakes as "Do your home workg" are easy to identify in this way.

VII. SUMMARY

1. When the median grade achievement in September, 1959, is compared with the median grade achievement in May, 1960, a crude gain of six months in reading achievement results. This study provides further evidence that these children may become progressively more retarded with respect to grade placement if they gain six months in scores in nine months of time.

2. Four of the schools made nine months or more gain either in median or mean measures. This indicates positive results for the procedure followed in the study.

3. School E, with seventy fifth graders taking both the pre-test and the post test, had a very low median in September. Many of the pupils scored so low that the test could not have given a valid measure of their reading ability. Consequently, many who read first and second readers through the school year may have gained more than the four and one-half months median gain which was shown by the test results.

4. Extremely erratic attendance by rural Navajo pupils may account for lack of greater measurable progress in school G.

5. The poor performance on the Idioms Test in the initial testing is a measure of the serious extent to which English functions as a foreign language for all the minority ethnic groups in the sample.

6. Efforts of teachers and research staff members seemed well coordinated and moral was high. Such a study, however, may need a longer period of working time to achieve normal crude gain in one year of time.

CHAPTER IX

AN EXPERIMENT IN TEACHING ORAL ENGLISH TO INDIAN CHILDREN IN NEW MEXICO KINDERGARTENS[1]

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I. INTRODUCTION

The Division of Indian Education in the New Mexico State Department of Public Instruction encourages the establishment of kindergartens admitting five-year-old Indian children in those rural schools having a substantial enrollment of Indian pupils. Special funds are provided since no funds are budgeted in New Mexico for public school kindergartens.

It was anticipated that the kindergarten would prove valuable in the education of the Indian child in a number of ways. It would initiate him socially into school life before confronting him with the scholastic tasks of the first grade; it would provide him an opportunity to gain a minimal English vocabulary; and it would give him a year in which to acquire a readiness for the beginning of reading.

With the inception of the Indian Research Study at the University of New Mexico, a number of studies were fielded incident to the accommodation of Indian children in New Mexico's public schools.[3] It is with one of these studies that this report is concerned. Approval by the State Division of Indian Education and by the superintendents and principals of the pilot schools enrolling Indian children was given for staff members of the Indian Research Study to become acquainted with the kindergarten teachers, to observe these teachers in action, and to complete a testing program in their classrooms. Testing was done during the spring months of 1959. Instruments used were a test designed to measure the English vocabulary of beginning Indian children[4] and the Metropolitan Reading Readiness Tests.[5]

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[1] Le Roy Condie, "An Experiment in Teaching Oral English to Indian Children in New Mexico Kindergartens" (Research in progress, University of New Mexico, Albuquerque, 1959-60).

[2] Mr. Condie served as Coordinator of the Indian Research Study during the 1959-60 school year; as a research assistant from 1957-1959.

II. THE PROBLEM

This study initiated a program having the two-fold purpose of testing ways of enriching the kindergarten curriculum and of evaluating the professional qualifications of the kindergarten teachers. It provided the cooperating teachers with certain aids, skills, and techniques judged to be useful in teaching English to Indian children and in promoting readiness for reading. By means of testing, the growth in command of English and readiness for reading achieved by the kindergarten children under the improved methods of instruction was measured.

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[3] See Chapters VI, VII, VIII, X, and XI.

[4] "A Test of Oral English for Children for Whom English is a Second Language" was prepared by the staff of the Indian Research Study. It proved useful in the study as an aid to teachers in grouping their kindergarten children for instructional purposes and in measuring vocabulary growth.

[5] Gertrude H. Hildreth, Metropolitan Readiness Tests, Form R (Yonkers-on-Hudson: World Book Company, 1949).

The hypothesis of this study was that, when the curriculum is elaborated to provide wider learning experiences for children, and when the teacher is acquainted with techniques specifically designed for instruction in oral English and reading readiness, a measurable increment in the achievement of pupils will be noted.

III. DESIGN OF THE STUDY

The study was designed to incorporate the following three phases:

1. To measure the reading readiness status of Indian children in the cooperating kindergartens at the conclusion of the 1958-59 school term before the experimental study began;
2. To have teachers incorporate into their programs during the 1959-60 term aids and techniques intended to facilitate the learning of English and readiness for reading;
3. To measure at the conclusion of the 1959-60 term the reading readiness status of the children taught under the recommended methods and procedures.

Pupils enrolled during the 1958-59 school term were designated as the control group, and those enrolled during the 1959-60 school term represented the experimental group.

Statistics were based upon the results of the Metropolitan Readiness Tests. Tests of significance were applied to these data. Statistics were not computed for the unstandardized picture vocabulary test. Rather, the results of this test are presented in graphic form.

IV. PROCEDURE

Teacher Workshops

Workshops, held one Saturday each month on the University of New Mexico campus, were the principal means of implementing the study. The study was outlined to the kindergarten teachers, and the aids and techniques to be used in the classroom during the 1959-60 term were introduced and explained. At the meetings, time was provided for idea exchange and philosophical discussion of the role of the kindergarten in the oral language instruction of Indian children.

At each meeting, a new item was demonstrated, and a replica of the item, to become her personal property, was given to each teacher. Materials distributed included:

September: Comprehensive picture libraries obtained from the Bureau of Indian Affairs.[6]

October: Picture libraries, drawn and printed on the University campus under the direction of the investigator.

November: Jumbo-size kindergarten blocks, assembled and painted, and other blocks in unassembled form.

December: Felt cutouts illustrating the story of the Nativity, with accompanying narrative scaled to kindergarten level.

January: A grocery store, made from cardboard cartons at no cost. This was demonstrated, then loaned out to the teachers.

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[6] Navajo Agency Education Personnel. Picture Word Cards, Beginning Level, developed at Workshop in Navajo Education, Flagstaff, Arizona, and illustrated by Jack H. Schwanke. Lawrence, Kansas: Haskell Press, 1959.

February: Papier mâché hollow logs as aids to teaching concepts such as *in*, *on*, *above*, *below*, *around*, *over*, *under*, *through*, *out*, and *behind*. A toy kitten was provided with each log, and its use was demonstrated for concretely teaching these concepts.

March: Sets of Easter puppets. A resource visitor demonstrated making and using puppets.

April: Bean-bag toss sets, intended to teach arithmetic vocabulary concepts.

Visits to Schools

The staff of the research study planned visits to the pilot schools each month. The investigator was able to talk with each teacher in her own classroom following each workshop on campus. These visits to the cooperating kindergarten and pre-first grade teachers reinforced the workshops. The application of the recommended techniques was observed and mutually evaluated by staff members and teachers. The teachers' use of new techniques and willingness to demonstrate learning activities with children merited high praise. This made it possible for the investigator to keep morale at a high level throughout the experiment.

The Testing Program

Test of Oral English for Children for Whom English is a Second Language. Reference has been made to the picture vocabulary test which was developed by the staff of the Indian Research Study. The opportunity to see their pupils' growth in oral English, and to compare it with the growth in the classrooms of their fellow teachers, provided a new motivation that was lacking in the teachers' work heretofore.

"A Test of Oral English for Children for Whom English is a Second Language" was given to the 1959-60 groups in September and again in January. Consisting mainly of picture batteries, it samples the oral English vocabulary of the child. The specific word-concepts in the test were drawn by random sampling from a total list of 2,053 words. This word list was a compilation of all the words contained in the Gates Vocabulary List for the Primary Grades,[7] Stone's Primary Word List,[8] The Dolch Basic Word Test,[9] Tireman's Minimum Vocabulary for First-Grade Spanish-Speaking Children,[10] The Branch of Education, Bureau of Indian Affairs, Minimum English Vocabulary for Pre-First Grade,[11] and the 500 most frequently used words in the International Kindergarten Union Word List.[12] This composite list was considered a maximum, rather than a minimum, vocabulary list. Included in the test are items intended to measure the child's facility with nouns, verbs, modifiers, and connectors. The test was individually administered by the Research Study staff.

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[7] Arthur I. Gates, *A Reading Vocabulary for the Primary Grades* (New York: Columbia University, 1935).

[8] Clarence R. Stone, *Progress in Primary Reading* (St. Louis: Webster Publishing Company, 1950), pp. 120-130.

[9] Edward W. Dolch, *The Dolch Basic Sight Word Test* (Champaign: The Garrard Press, 1942).

[10] Loyd S. Tireman, *Teaching Spanish-Speaking Children* (Albuquerque: The University of New Mexico Press, 1948), pp. 71-73.

[11] Bureau of Indian Affairs, *Minimum Essential Goals for Indian Schools, Beginning Year, Levels One and Two* (third edition; Lawrence, Kansas: The Haskell Press, 1953), pp. 46-47.

[12] International Kindergarten Union, *A Study of the Vocabulary of Children Before Entering the First Grade* (Baltimore: International Kindergarten Union, 1928).

The test is in four parts. In Part I, the examiner named an object and asked the child to point to the drawing in a multiple-choice selection. For the item below, the child was asked to "Point to the table."

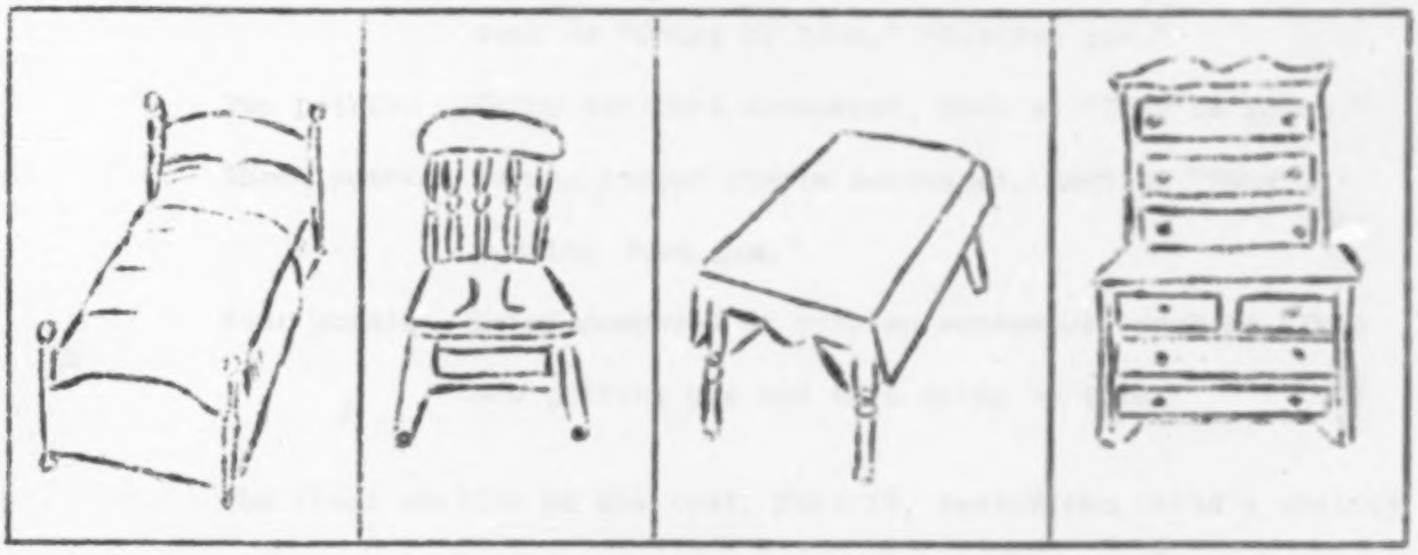

Figure 4
Item 22 of "A Test of Oral English for Children for Whom English Is a Second Language"

In Part II, the examiner pointed to a picture and asked the child to give its name. Below, the examiner pointed to each picture and asked, "What is that?"

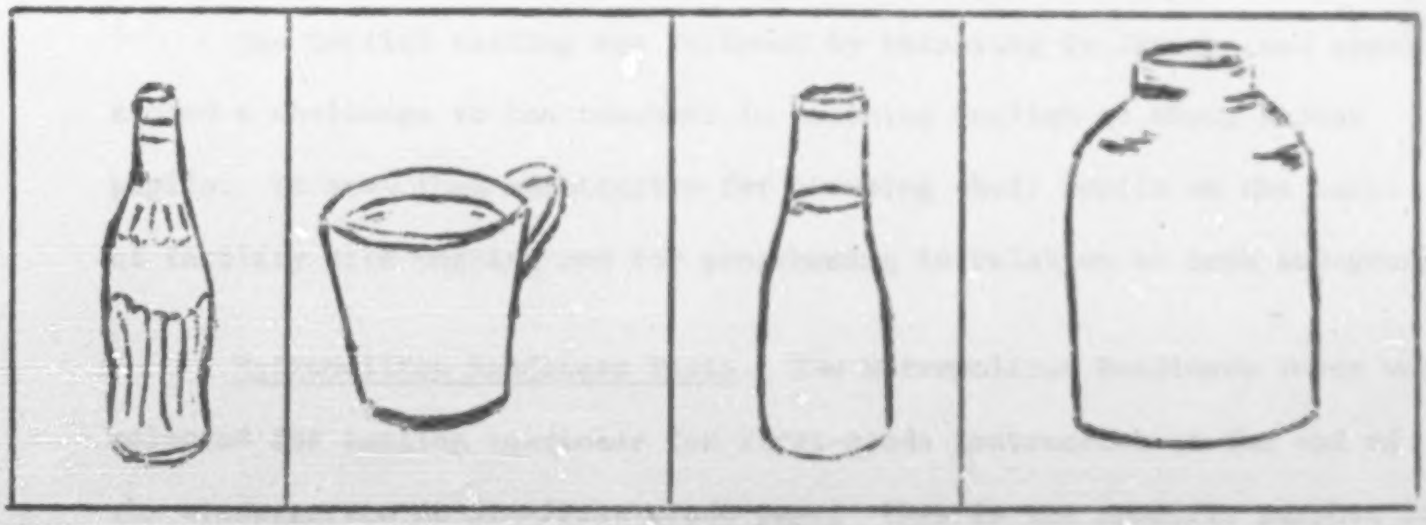

Figure 5
Item 14 of "A Test of Oral English for Children for Whom English Is a Second Language"

In Part III, the child was confronted with a situation picture, and encouraged to comment on it, that is, to "tell a little story." Scoring was subjectively judged by the following scale:

One point:	Naming names, such as "Car" or "Man," or using phrases, such as "Going to town," "Getting gas."
Two points:	Using two-word sentences, such as "They're going."
Three points:	Saying longer simple sentences, such as "They're getting some gas."
Four points:	Using compound or complex sentences, such as "They are getting gas and then going to town."

The final section of the test, Part IV, tested the child's ability to respond to comprehension questions such as:

1. Why do we have books?
2. Why do we have stoves?
3. How old are you?
4. Where do we put paper that is no good?

The initial testing was followed by retesting in January and represented a challenge to the teachers in teaching English to their Indian pupils. It gave them a criterion for grouping their pupils on the basis of facility with English and for programming in relation to each sub-group.

Metropolitan Readiness Tests. The Metropolitan Readiness Tests were selected for testing readiness for first-grade instruction at the end of the kindergarten or pre-first grade year. This is the specific purpose for which the test was designed for English-speaking children. Since the Indian and Spanish-American children in the cooperating schools attend classes with native English-speaking pupils and are expected to read the same materials, they must demonstrate the same readiness for reading. This test was selected because it adequately samples vocabulary, visual and auditory discrimination, muscular coordination, number readiness, ability to listen for instructions, and ability to pay attention in a group. It is further possible to derive sub-test scores on reading, number, and draw-a-man readiness status.

Aids and Techniques

Teachers were asked to elaborate their instructional programs by incorporating the following aids and methods:

An enlarged oral vocabulary word list. This list, drawn from the major word lists previously mentioned, included 2,053 words of highest frequency in the English language, words adjudged to be most useful. The list was distributed to the teachers as a guide and reference.

Three-dimensional objects. Teachers were encouraged to collect and use large numbers of miniature three-dimensional objects, such as animals, vehicles, household furnishings, and articles of grooming, as aids to teaching oral English and readiness for reading.

Picture libraries. Two extensive picture files were provided each teacher. One set of approximately two hundred pictures, drawn and printed on the University of New Mexico campus under the direction of the investigator, was keyed to the more important and difficult word-concepts in the 2,053-word vocabulary list. The teacher wishing to introduce or reinforce a word-concept could thus go to her picture library and select the appropriate picture.

In addition, each teacher was provided a picture file made available through the Branch of Education of the Bureau of Indian Affairs.[13] Since the latter was keyed to a minimum vocabulary, the teachers made extensive use of it in the beginning of the year. The set produced by the Indian Research Study staff was useful as the children progressed into a wider vocabulary after mid-year.

Tape Recorder. Each school already possessed a tape recorder and teachers were instructed in its operation. Recording and playing back the children's speech was a motivational device to encourage the use of English.

Filmstrip Library. A library of eighty filmstrips,[14] selected and purchased by the Research Study staff, was in constant circulation among the cooperating kindergartens. These filmstrips, projected slowly frame-by-frame, were used for conversation in English.

Other teaching helps. Teachers were encouraged to use numerous other aids. These included sand tables, jumbo picture books, flannel boards, giant-size blocks, record players, and finger plays.

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[13] Navajo Agency Education Personnel, *loc*. *cit*.

[14] Curriculum Filmstrips (10031 Commerce Avenue, Tujunga, California: Curriculum Materials Corporation). Filmstrips were selected from the following categories:

Story Book Favorites
Aesop's Fables
Home and Rural Community
Fun for Children
Trip to the Country
Animal Life
City Adventures
Nature Experiences
Country Community
Eskimos of Alaska
City Community Workers
Community Workers
Transportation, Planes, Trains
Food, Shelter, Clothing
American Folk Tales
Stories to Read
Nature Study Stories
Celebrating Holidays
Indian Activities
South America

IV. RESULTS OF THE EXPERIMENT

A Test of Oral English for Children for Whom English is a Second Language.

The results of testing with this instrument are shown in Figure 6. The pupils in all classes made significant gains in class averages in all four schools. The two groups scoring lowest in September made greater percentages of gain, but this would be expected since their level of language provided so much room for growth through the year.

Because this test provided the teachers with a range of scores showing extent of English vocabulary, it was valuable for purposes of sub-grouping and supplemented the teachers' judgment in evaluating each child's growth. The test was also valuable in that each child's achievement was measured in terms of his own previous measurement. This growth for whole classes is presented in Figure 6.

Finally, the test provided motivation for the teachers. Knowing that the children were to be re-tested in the future, teachers were motivated to improve children's oral language as much as possible.

Further experimentation with this test to provide alternate forms and norms for its use is indicated.

Metropolitan Readiness Tests

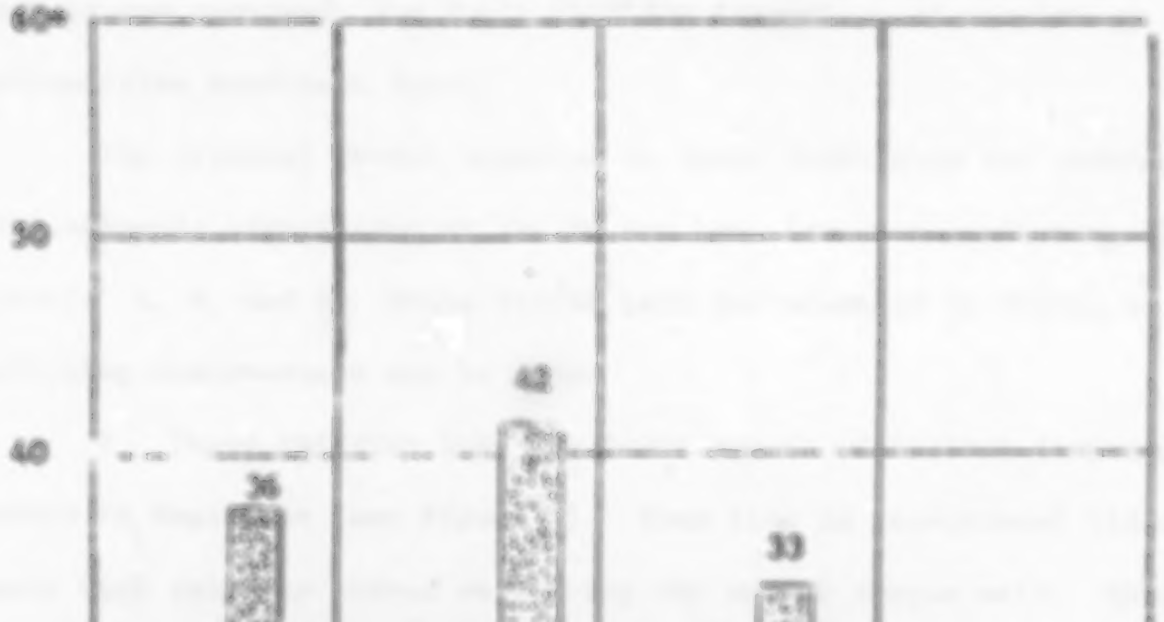
Toward the conclusion of the 1959-60 school term, the Metropolitan Readiness Tests were given in each of the cooperating kindergartens. Test results were already on file for the 1958-59 term. The 1959-60 tests were given on a calendar date corresponding to that of the previous year. Statistics were computed to determine whether significantly greater pupil growth had occurred under the experimental program. Altogether, eleven

Figure 6

PUPIL GROWTH IN ENGLISH VOCABULARY AS MEASURED BY

A TEST OF ORAL ENGLISH FOR CHILDREN
FOR WHOM ENGLISH IS A SECOND LANGUAGE

September, 1959, to January, 1960



*Possible Score = 60

**Mid-score of the class, roughly equating with the statistical median.

teachers participated in the experiment. Some of these were pre-first and first-grade teachers for whose classrooms no data were available for the 1958-59 term. For this reason, test results from only seven classrooms were included in the compilation. Since three classrooms in one school and two classrooms in another school were taken as single groups, only four groups resulted. See Table XXXVI for comparison of results on the Metropolitan Readiness Tests.

The critical ratios reported in Table XXXVI show the results to be statistically significant at the 01 per cent level of confidence for schools A, B, and D. While little gain was measured in school E, the following observations may be made:

1. These children knew the least amount of English language when tested in September (see Figure 6). They live in traditional villages where high value is placed on knowing the mother tongue well. In some instances, children are discouraged to use English outside the school, and the basic motivation for learning is lacking.

2. The teachers in these kindergartens did work conscientiously, and their classrooms evidenced the same techniques and motivations used by the other teachers.

In schools A and B, the teacher variable was constant for the two years. These teachers were strongly motivated in competing against their record of the previous year, and their commendable class gains can be attributed, in large measure, to improved teaching.

TABLE XXXVI

COMPARISON OF RESULTS OF METROPOLITAN READINESS TESTS

School	1958-59					1959-60					Critical Ratio
	Number	Percentile Range	Mean Percentile	Standard Deviation	Standard Error	Number	Percentile Range	Mean Percentile	Standard Deviation	Standard Error	
A*	17	2-99	49.8	24.8	6.0	22	25-99	72.69	18.1	3.86	3.41
B	17	3-45	15.1	14.0	3.39	11	11-98	55.32	27.5	8.29	4.48
D**	21	1-19	3.26	4.96	1.08	31	1-70	16.195	20.1	3.63	3.41
E***	64	1-66	15.05	16.25	2.03	45	3-66	18.0	11.50	1.71	1.30

*Pre-first grade program identical with kindergarten, but pupils were six years of age or older.

**Two separate kindergarten classrooms were treated as one group.

***Three separate kindergarten classrooms were treated as one group.

V. SUMMARY

An improvement may confidently be expected in achievement in the use of oral English and readiness for reading by Indian children enrolled in public school kindergartens when:

1. Teachers are cooperatively enlisted in a program of professional and curriculum improvement;
2. Maximum use is made of audio-visual teaching aids;
3. Idea exchange is effected by means of in-service training (notably, the workshop);
4. Supervision is completely permissive.

CHAPTER X

THE INDIAN CHILD'S STATUS IN NEW MEXICO'S PUBLIC ELEMENTARY SCHOOL SCIENCE PROGRAMS [1]

Carol Charles

I. THE PROBLEM

Providing instruction appropriate to a pupil's academic level is a well-recognized requisite of effective learning. For Indian children this implies even more than for Anglo children. While heterogeneity is expected in typical Anglo classrooms, divergence is seldom due to basic differences in life philosophy. Differences do exist, of course, in individual and group value patterns, but their effects on methods of instruction stem primarily from attitudes concerning the worth of education and are reduced by the application of appropriate motivation.

Indian children, on the other hand, are hampered not only by educational attitudes similar to those of lower social classes, but additionally, evidence indicates, by factors operating to cause a "cultural barrier." Such factors include problems connected with learning English as a second language and problems of a paucity of background experiences. An additional factor, and one of great importance, involves cultural beliefs concerning religion and mythology. These beliefs, accepted literally by traditional Indian groups, explain large numbers of natural phenomena. When such beliefs directly oppose principles taught in schools, learning problems seem certain to result. Providing instruction at the child's level, therefore, presupposes acquaintance with cultural beliefs and the use of tact in dealing with them.

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[1] Carol Charles, "The Indian Child's Status in New Mexico's Public Elementary School Science Program" (Research in Progress, The University of New Mexico, Albuquerque, 1959-60). Mr. Charles served as a research assistant in the Indian Research Study, 1959-60.

Evidence obtained during initial testing done by the staff of the Indian Research Study had indicated that Indian children were retarded in reading ability. The purpose of this study was to determine the existence of similar retardation in the acquisition of basic science concepts and to examine possible conflicts between certain cultural beliefs and concepts taught in elementary science.

II. THE SUBJECTS

The sample from which data were obtained consisted of the entire fifth-grade population attending the seven public schools cooperating in the Indian Research Study. By and large, the eleven classrooms included were multicultural. All of these included Indians, while eight also included Anglos or Spanish Americans, or both. Table XXXVII shows the make-up of fifth-grade enrollments by schools.

In addition to these subjects, three classrooms of urban fifth-grade pupils were tested to serve as a comparative group for the two science tests being used, one of which was not standardized. These students were in regular attendance at an Albuquerque public school, selected by the research staff because of its location in what was felt to be a highly typical middle-class Anglo neighborhood.

Numbers in these samples, by ethnic group, are as follows: Urban Anglo, 78; Rural Anglo, 35; Apache, 52; Navajo, 46; Pueblo, 90; and Spanish American, 44.

TABLE XXXVII

ETHNIC GROUP ENROLLMENT IN THE SEVEN COOPERATING SCHOOLS

School	Rural Anglo N=35	Apache N=52	Navajo N=46	Pueblo N=90	Spanish American N=44
A	9	0	24	0	8
B	5	30	3	0	3
C	9	0	0	5	10
D	0	1	0	4	19
E	4	21	0	0	4
F	0	0	0	81	0
G	8	0	19	0	0

III. PROCEDURES

Test Selection

The Science Test. Because of the design of this study, reliable and valid assessment of pupil achievement in science was of greatest concern. Three primary criteria were formulated for use in choosing the test by which this assessment was to be made. They were: (1) The test must be comprehensive but not too time consuming. (2) The test must be accompanied by norms. (3) Directions must be clear and concise, and provisions for making responses simple.

After examining sample copies of available tests, the research staff concluded that these criteria were best met by *National Achievement Tests, Elementary Science Test*, Form A, Grades 4-6.[2] This test, identified in the remainder of the report by the abbreviation NAT-S, is comprised of 125 items with a suggested working time of thirty-five minutes. The five areas covered are Practical Applications, Cause and Effect Relationships, Miscellaneous Facts, Simple Identifications, and Evaluation of Statements. Norms are included which permit translation of raw scores into grade-placement scores. Twenty-five items are answered by printing letters in blanks. The remaining one hundred items entail merely the underlining of responses. The coefficient of reliability is .91, and curricular validity is evident.

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[2] Lester D. Crow and W. L. Shulman, *National Achievement Elementary Science Test* (Rockville Centre, New York: Acorn Publishing Co., 1955).

The Intelligence Test. The purpose of intelligence testing in this study was not to categorize ethnic groups in terms of mental ability. It was, rather, to explore the degree to which performance, especially on the admittedly biased verbal portion of a standard intelligence test, functions as a predictor of academic success. The test chosen for this purpose by the research staff was the Otis Quick-Scoring Mental Ability Test, New Edition, Alpha Test, Short Form.[3] Desirable features include a complete absence of materials to be read by the subjects, ease of making responses, verbal and non-verbal portions, and ease of scoring.

The Reading Test. The Gates Reading Survey[4] was selected as the instrument for assessing reading ability. It is composed of three sections: Speed and Accuracy Test, Reading Vocabulary Test, and Level of Comprehension Test. Raw scores on each of these sections may be converted to grade-placement scores. These in turn may be averaged to yield a grade-placement score for the entire survey.

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[3] Arthur S. Otis, Otis Quick-Scoring Mental Ability Test, New Edition, Alpha Test, Short Form (Yonkers-on-Hudson, New York: World Book Co., 1954).

[4] Arthur I. Gates, Gates Reading Survey (New York: Columbia University, 1958).

The Culturally-Biased Science Test. The Culturally-Biased Science Test, abbreviated CBT in this report, was constructed by the investigator as an aid in investigating the relationship between certain cultural beliefs and science achievement. Essentially, it is a science test consisting of fifty statements, each of which is followed by a group of four words or phrases. From this group the subject chooses the word or phrase which he feels best completes the statement.

A survey of literature reveals that Indians traditionally interpreted their religion and mythology literally. Thus, witches, not germs, cause disease, sleeping on feathers brings bad dreams, and winter and summer result from ceremonies performed at the solstices to "turn back the sun."

The Culturally-Biased Science Test was designed so that the possible responses to each item included one which was correct. Of the three detractors, one was based on Indian cultural belief, while most items included one response based on common Anglo misconception and one which might be neutral, acceptable, or unacceptable to any ethnic group tested. Examples are: (A copy of this test may be found in Appendix C.)

There are witches and ghosts (a) only at Halloween
(b) all the time
(c) never
(d) only at night

Rain is caused (a) by condensation of water vapor
(b) by smoke clouds
(c) by rain dances
(d) by wind

Test Administration and Collection of Data

Science and intelligence tests were administered in April, and reading tests in early May, 1960. All were administered by research staff personnel. The Otis Alpha and Gates Reading Survey were administered precisely according to directions. However, because of the possibility of their results being influenced by varying degrees of ability to read individual items, the NAT-S and the CBT were read to the subjects. Each item, together with all its possible responses, was slowly and distinctly read aloud by the tester. Subjects were instructed to make the response they considered correct, and then the next item was read. Exception to this routine occurred only during the testing of urban Anglo subjects who served as a comparison group. They were instructed to work at their own rate, but were told that any words they could not pronounce would be pronounced for them.

Teacher estimates of pupil achievement were also secured. The classroom teacher was asked to assign each student a grade, A, B, C, D, or F, in terms of what he considered the pupil's science achievement to be at that particular time. These grades were then converted to numerical scores to be used in examining the degree of relationship of teacher marks to student performance on the NAT-S. Letter grades were arbitrarily assigned numerical values as follows: F=0, D=2, C=5, B=8, A=11.

Student birth dates, to be used in determining the degree of educational retardation, were secured from school records.

Analysis of the Data

The data were analyzed in order that generalizations might be made concerning relative achievement and the factors relating to this achievement in science. A description of procedures follows.

Between-Group Methods. Ethnic group means were obtained for age, NAT-S, CBT, Gates Reading Survey sub-tests, Otis Alpha (non-verbal, verbal, total raw scores, and I.Q.), and teacher estimates of grades. Means of minority ethnic groups were compared to those of Anglo groups and, where possible, to standardized norms. To ascertain the significance of apparent differences, critical ratios were computed by which significance levels could be determined.

Within-Group Methods. Data were further analyzed to reveal relationships within various ethnic groups between science achievement and various other tests. This portion of the analysis consisted of a correlational procedure using the Pearson Product-Moment machine formula. Criterion scores were those obtained from the use of the NAT-S. Criterion scores were correlated with scores obtained on the CBT, the Otis Alpha (non-verbal, verbal, total, and I.Q.), Gates Reading Survey (Speed and Accuracy, Vocabulary, Comprehension, and Grade Placement), and those scores converted from teacher-estimated grades. This portion of the analysis was designed to indicate relative degrees of relationship between tests and criterion and, consequently, those tests which could be considered good predictors of academic success in science.

IV. RESULTS

Results of the between-groups analysis are summarized in Table XXXVIII. They indicate normal performance by Anglo members of the sample in all areas investigated. With the exception of the non-verbal portion of the Otis

TABLE XXXVIII

MEAN SCORES, STANDARD DEVIATION, AND GRADE PLACEMENTS BY ETHNIC GROUP FOR EACH MEASURE OBTAINED*

		COMPARATIVE GROUP N=78	RURAL ANGLO N=35	APACHE N=52	NAVAJO N=44	PUEBLO N=90	SPANISH AMERICAN N=43
AGE	M	11-0	11-0	12-0	13-7	12-2	12-1
NAT-S	M	92.68 ± 4.94	90.34 ± 4.18	67.50 ± 4.64	59.43 ± 5.68	66.73 ± 2.76	69.02 ± 5.06
	S.D.	17.25 ± 3.50	9.45 ± 2.94	12.85 ± 3.25	14.43 ± 4.00	9.83 ± 1.88	12.84 ± 3.59
	G.P.	6-9	6-6	4-7	4-3	4-7	4-8
CBT Raw Score	M	37.00 ± 1.75	36.06 ± 1.42	28.92 ± 2.45	24.23 ± 2.55	27.22 ± 1.08	30.98 ± 2.27
	S.D.	6.10 ± 1.24	3.20 ± 1.00	4.94 ± 1.26	6.49 ± 1.80	4.00 ± .77	5.76 ± 1.62
GATES READING SURVEY	M		19.39 ± 2.81	15.81** ± 3.17	11.28 ± 2.86	12.72 ± 1.46	13.33 ± 2.99
Speed and Accuracy	S.D.		5.98 ± 1.96	8.00 ± 2.25	6.70 ± 1.87	5.38 ± 1.03	7.30 ± 2.09
	G.P.		6-0	5-2	4-0	4-4	4-4
Vocabulary	M		26.23 ± 2.97	15.33 ± 2.55	13.45 ± 2.73	14.63 ± 1.67	16.03 ± 3.15
	S.D.		6.29 ± 2.09	6.45 ± 1.81	7.04 ± 1.96	6.14 ± 1.18	7.71 ± 2.21
	G.P.		5-4	3-6	3-3	3-5	3-8
Comprehension	M		21.36 ± 3.15	13.28 ± 2.79	9.80 ± 3.25	11.15 ± 1.89	11.53 ± 2.81
	S.D.		6.70 ± 2.21	7.26 ± 2.04	8.33 ± 2.32	6.97 ± 1.34	6.88 ± 1.97
	G. P.		5-3	3-8	3-3	3-4	3-5
Total Grade Placement	M	(5-8)	5-7	4-2	3-7	3-9	4-0
	S.D.		1-1	1-2	1-3	1-0	1-2
OTIS ALPHA							
Non-Verbal Raw Score	M		33.50 ± 2.30	31.02** ± 1.78	32.68*** ± 1.75	32.38*** ± 1.29	30.78** ± 1.89
	S.D.		5.17 ± 1.65	4.85 ± 1.24	4.48 ± 1.25	4.56 ± .90	4.74 ± 1.34
Verbal Raw Score	M		38.65 ± 1.73	28.59 ± 1.54	27.10 ± 2.16	27.80 ± 1.29	31.23 ± 2.04
	S.D.		3.82 ± 1.21	4.32 ± 1.11	5.54 ± 1.54	4.56 ± .90	5.11 ± 1.45
Total Raw Score	M		72.18 ± 3.35	59.80 ± 2.89	59.75 ± 3.15	60.18 ± 2.05	62.07 ± 3.35
	S.D.		7.46 ± 2.37	8.04 ± 2.05	8.12 ± 2.26	7.36 ± 1.45	8.43 ± 2.39
Alpha I.Q.	M		100.88 ± 7.32	83.73 ± 3.02	80.15 ± 4.36	83.49 ± 2.35	85.14 ± 4.39
	S.D.		14.05 ± 4.46	8.36 ± 2.17	11.18 ± 3.12	8.34 ± 1.65	11.08 ± 3.15
ESTIMATED GRADE	M	6.68 ± .86	7.86 ± .85	3.35 ± .83	3.49 ± .75	4.59 ± .72	5.74 ± 1.17
	S.D.	3.00 ± .62	1.91 ± .59	2.32 ± .59	1.92 ± .54	2.69 ± .51	2.93 ± .67

*Differences between means of Rural Anglos and minority ethnic groups significant at .01 level.

**Significant at .05 level.

***Not significant.

Alpha, however, all minority ethnic groups deviated significantly from Anglo norms. Minority ethnic groups averaged approximately one year older chronologically while performing subnormally on the various tests. Patterns of responses to items on the CBT, shown in Table XXXIX, vary quite noticeably from Anglo group to minority ethnic group.

Coefficients of correlation obtained between the NAT-S and various other measures were positive and, with three exceptions, significant at the .01 level. Generally, highest coefficients were observed in correlations between criterion scores and scores on the CBT and total Gates Reading Survey. Correlations between teacher estimates of pupil achievement and criterion scores ranged from an insignificant .26 for Rural Anglos to a highly significant .79 for Navajos. A list of correlation coefficients by ethnic groups is given in Table XL.

V. DISCUSSION

Academic Retardation

Retardation in both science and reading was evidenced by all minority ethnic groups in their test performance. While there was no significant difference in science performance between Urban and Rural Anglos, Indian and Spanish American grade-placement scores showed from two to two and one-half years retardation in terms of Anglo scores. It may be noted in TableXXXVIII that both Anglo groups achieved mean scores on the NAT-S which, when converted to grade-placement scores, showed them to be one year advanced in terms of the test standardization population. There may be reason to suspect that norms accompanying the test are too lenient, especially since Rural Anglos were not above normal in either I.Q. (100.88)

TABLE XXX1X

RESPONSE PATTERNS TO FIVE SELECTED ITEMS ON THE CBT*

Item	Urban Anglo N=78	Apache N=52**	Navajo N=46**	Pueblo N=90	Spanish American N=41**
14. A.	16	62	62	45	34
B.	1	4	0	7	0
C.	61	24	10	22	40
D.	0	14	20	16	8
18. A.	74	42	40	34	44
B.	0	30	36	12	24
C.	1	10	6	15	4
D.	3	22	10	29	10
30. A.	38	20	10	26	28
B.	32	22	16	22	22
C.	2	16	0	4	6
D.	6	44	66	38	26
36. A.	0	2	2	0	4
B.	2	0	4	1	0
C.	2	42	50	12	8
D.	72	60	36	77	70
50. A.	0	2	8	3	2
B.	30	64	52	54	20
C.	47	26	22	23	44
D.	1	12	10	10	16

*Response frequencies vary slightly due to improperly marked test papers.

**Response frequencies doubled to facilitate direct comparison.

TABLE XL

COEFFICIENTS OF CORRELATION BETWEEN SCORES OF NAT-S AND VARIOUS TESTS

Test	Comparative Group N=78	Rural Anglo N=35	Apache N=52	Navajo N=44	Pueblo N=90	Spanish American N=43
CBT	.78	.55	.47	.77	.62	.77
OTIS ALPHA						
Non-Verbal		.30*	.57	.29*	.34	.38
Verbal		.42	.39	.57	.65	.46
TOTAL		.45	.70	.53	.53	.57
A.I.Q.		.42	.58	.64	.54	.58
GATES READING						
Speed and Accuracy		.48	.62	.69	.58	.61
Vocabulary		.45	.73	.79	.66	.62
Comprehension		.41	.64	.84	.73	.49
Grade Placement		.46	.73	.81	.76	.71
ESTIMATED GRADE	.78	.26*	.64	.79	.54	.50

*Not significant at the .01 level. All other coefficients are significant at the .01 level.

or reading level (5.7). Reading grade-placement scores compared with science achievement scores noted previously show similar retardation. Here, reading retardation of minority groups ranged from one and one-half to two years. Rural Anglos read at grade level. Navajo mean reading level was 3.7, fully two grade levels below normal. (See Table XXXVIII.)

When mean ages are considered, evidence of retardation becomes even more pronounced. Rural and Urban Anglos had mean ages of 11.0 which were normal for the testing date. Indian and Spanish-American groups were all one year or more overage for grade. Navajos, as a group, were oldest, their mean age being 13.7. Thus, on the basis of age, they were more than four years retarded in science achievement and reading ability.

NAT-S grade-placement frequencies are given in Table XLI, and Gates Reading Survey grade-placement frequencies are given in Table XLII.

Cultural Beliefs Relating to Science

Minority ethnic groups scored significantly lower than Anglo groups on the CBT. Raw score frequencies appear in Table XLIII. The Navajos had the lowest mean score and highest standard deviation of all groups. Of greater interest than mean scores, however, are the patterns of responses made by various ethnic groups to individual test items. Comparison of these patterns, as in the selected instances given in Table XXXIX, reveals a marked disposition of different groups toward certain responses. Minority ethnic groups clearly do not think in the same frame of reference as do Anglos in the majority of situations presented in the CBT.

Intelligence Testing

While intelligence tests were not given for the purpose of attempting to show group differences in "innate mental ability," non-verbal, verbal,

TABLE XLI

NAT-S GRADE-PLACEMENT FREQUENCIES FOR VARIOUS ETHNIC GROUPS

Grade Placement Intervals	Rural Anglo N=35	Apache N=52	Navajo N=46	Pueblo N=90	Spanish American N=44
8-2,8-4	1				
7-9,8-1					
7-6,7-8	2				
7-3,7-5	6				
6-10,7-2	3	1	1		
6-7,6-9	9*	1	1	1	1
6-4,6-6	3	1		2	1
6-1,6-3	4	4	1	3	1
5-8,5-10	1	1		1	7
5-5,5-7	3	2	4	7	3
5-2,5-4		6	1	11	2
4-9,5-1	1	5	2	13	6
4-6,4-8	1	10*	3	11*	10*
4-3,4-5	1	10	15*	26	8
3-10,4-2		8	7	6	2
3-7,3-9		3	6	5	1
3-4,3-6			4	3	1
3-1,3-3			1	1	1

*Interval containing median grade-placement.

TABLE XLII

GATES READING SURVEY GRADE-PLACEMENT FREQUENCIES FOR VARIOUS ETHNIC GROUPS

Grade Placement Intervals	Rural Anglo N=31	Apache N=43	Navajo N=40	Pueblo N=81	Spanish American N=41
7-7,7-9	1		1		
7-4,7-6			1		
7-1,7-3	3				
6-8,7-0	3	1			1
6-5,6-7	2	1			
6-2,6-4		2			1
5-9,6-1	4			1	2
5-6,5-8	5*	3	1	4	1
5-3,5-5	1	2		2	1
5-0,5-2	3	2	3	7	3
4-7,4-9	1	7	2	6	2
4-4,4-6	5		1	6	3
4-1,4-3	2	2	4	5	2
3-8,4-0		5*		7	6*
3-5,3-7		6	4	11*	4
3-2,3-4		4	5*	7	5
2-9,3-1		5	6	11	2
2-6,2-8		1	6	8	4
2-3,2-5	1	2	5	5	3
2-0,2-2			1	1	1

*Interval containing median grade-placement.

TABLE XLIII

CBT RAW SCORE FREQUENCIES FOR VARIOUS ETHNIC GROUPS

Raw Score Intervals (Possible Score=50)	Rural Anglo N = 35	Apache N=52	Navajo N=44	Pueblo N=90	Spanish American N=44
43-44		1			
41-42	5				
39-40	2		1		2
37-38	10	2			3
35-36	6*	3	3	8	7
33-34	8	4		7	6
31-32	3	12	4	10	8*
29-30	1	7*	3	17	4
27-28		5	8	15*	6
25-26		7	3	9	1
23-24		7	4*	7	2
21-22		2	7	5	2
19-20		1	5	4	1
17-18		1	1	3	1
15-16			3	1	
13-14			2	3	1
11-12				1	

*Interval containing median score.

total, and Alpha I.Q. scores were recorded in order to determine their effectiveness as predictors of achievement. Alpha I.Q. distribution is presented in Table XLIV.

In comparing mean non-verbal scores, only slight differences were noted between groups. Of minority ethnic groups, Navajos scored highest, only .82 below the Rural Anglo mean. While Rural Anglos scored significantly higher on the verbal than the non-verbal portion, however, Indian groups scored significantly lower on the verbal portion. This resulted in marked differences between Anglo and Indian groups in verbal, total, and Alpha I.Q. scores. Even though the Spanish American group scored .45 higher in verbal than non-verbal performance, they remained significantly below Anglo norms in verbal, total, and Alpha I.Q. scores.

The Tests as Predictors

One of the purposes of the study was to find degrees of relationship between scores on a science achievement test and scores on tests of other abilities. Of the various measures correlated with science achievement, the best predictors proved to be the CBT and the Gates Reading Survey Grade Placement. Scores of three of the six groups tested yielded correlation coefficients of .77 or above between CBT and NAT-S. Gates Grade Placement and NAT-S scores of four groups correlated .71 or above. The Reading Comprehension Test of the Gates Reading Survey proved to be the best single predictor for one ethnic group. Although it did not correlate as highly as other predictors for all groups, a coefficient of .81 was obtained for Navajos.

Generally, total and part scores on the Otis Alpha indicated moderate predictive ability. The verbal portion predicted considerably better

TABLE XLIV

OTIS ALPHA I.Q. DISTRIBUTION FOR VARIOUS ETHNIC GROUPS

Alpha I.Q. Interval	Rural Anglo N = 34	Apache N=52	Navajo N=40	Pueblo N=85	Spanish American N=43
120-124	1				
115-119	1				
110-114	4				
105-109	6	1	1	1	2
100-104	12*	1	1	2	4
95-99	1	2	4	5	3
90-94	3	9	1	9	4
85-89	3	11	4	21	6
80-84	3	14*	10*	19*	9*
75-79		6	7	18	11
70-74		7	9	7	3
65-69			1	3	
60-64		1	1		
55-59					
50-54			1		1

*Interval containing median Alpha I.Q. score.

than did the non-verbal portion, the one exception being found in the case of the Apaches. Differences in predictive value between verbal, total, and Alpha I.Q. scores were slight.

Teacher Estimates of Achievement

Teacher estimates of pupil achievement in science, when correlated with test performance, ranged from statistically insignificant .26 for Rural Anglos to highly significant .78 for Urban Anglos and .79 for Navajos. It is interesting to note that Spanish Americans, performing fully two grade levels below Anglos, were judged by teachers to be doing work only slightly below that of the Urban Anglos. In terms of letter grades, mean estimates for these two groups were C+ and B-. Apaches and Pueblos, performing at approximately the same level as the Spanish Americans, received mean ratings from teachers of D+ and C- respectively. Rural Anglos, judged in multicultural classrooms, were felt on the average to be doing B work. As previously noted, teachers lacked sensitivity to the relative abilities of individuals within this group.

VI. SUMMARY AND CONCLUSIONS

Summary

The purposes of this study were to determine the level of science achievement of Apache, Navajo, and Pueblo Indian children in selected public schools and to explore the relationship between achievement level, cultural beliefs, and reading ability. Subjects from which data were obtained comprised the total enrollment of eleven fifth grade classrooms in seven public schools cooperating in the Indian Research Study. For purposes of comparison, seventy-eight middle-class Anglo fifth graders attending an Albuquerque public school were tested on two science tests. Tests used in the study included a standardized science test, a culturally-biased science test constructed by the investigator, a reading test, and an intelligence test. These tests were administered by members of the research staff. In addition, pupil ages and teacher estimates of pupil achievement were obtained. Data were analyzed in terms of mean differences between groups and correlations within groups. Significant differences were found between Anglo and minority ethnic group means in age, science achievement, reading ability, and verbal intelligence test scores. Except for non-verbal intelligence, various test scores proved to be moderate to good predictors of science achievement, with the Culturally-Biased Test and total reading ability scores yielding the highest correlations with the criterion. Teacher estimates of science achievement, except in the case of Rural Anglo students, showed moderate to high correlation with science test performance.

Conclusions

The data support the following conclusions:

1. All three Indian groups tested are three years or more retarded in science achievement.

2. Indian children, because of their cultural heritage, have a frame of reference which is different, to some extent, from that employed by Anglos in thinking about natural phenomena.

3. All Indian groups tested are two and one-half to three years retarded in reading ability.

4. High correlations exist between scores on a culturally-biased science test and science achievement and between reading ability and science achievement for all minority ethnic groups.

5. Verbal intelligence test scores are much more effective predictors of science achievement than are non-verbal intelligence test scores.

6. In this sample, reading scores and culturally-biased science test scores predict science test performance better than teacher estimates for Anglo, Spanish American, and Pueblo pupils, and as well as teacher estimates of letter grades for Navajo and Apache pupils.

CHAPTER XI

THE APPLICATION OF THE MEANING THEORY IN ARITHMETIC IN SELECTED THIRD-GRADE CLASSES

I. INTRODUCTION

This study in third-grade arithmetic will be reported at a future date as independent research.[1] Only a general schedule of the problem is presented at this time with some indication that a group of selected children were helped behaviorally in arithmetic. The purpose was to initiate a systematic program of arithmetic instruction based on the meaningful approach. It was anticipated that if the language, culture, and experience barriers were understood and accommodated, the extent of educational retardation in arithmetic might be reduced.

II. THE SAMPLE

This study was carried out during the 1959-60 school year in cooperation with selected third-grade classes in seven public schools in New Mexico which are currently integrating Indian children into their classrooms. Children from one or more minority ethnic groups were enrolled in each class. Enrollment by ethnic groups in each of the schools is presented in Table XLV.

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[1] Hitoshi Ikeda, "The Application of the Meaning Theory in Arithmetic in Selected Third-Grade Classes" (Research in progress, The University of New Mexico, Albuquerque, 1959-60). Mr. Ikeda is presently Assistant Professor of Education, El Centro Branch, San Diego State College, and served as research assistant in the Indian Research Project from 1958-60.

TABLE XLV

ENROLLMENT BY ETHNIC GROUPS IN SELECTED THIRD-GRADE CLASSES
1959-1960

School	Anglo N=48	Spanish American N=53	Navajo N=37	Apache N=53	Pueblo N=68	Total N=259
A	16	10	19	0	0	45
B	2	4	0	24	0	30
C	5	13	0	0	5	23
D	2	9	0	29	0	40
E	0	0	0	0	62	62
F	0	12	0	0	1	13
G	23	5	18	0	0	46

III. METHODS OF PROCEDURE

The procedure for carrying out the study involved the following steps:

1. Attendance at a pre-school workshop.
2. Selection and administration of tests.
3. Organization of groups within classes and plans for teaching sub-groups.
4. Selection of materials of instruction.
5. Attendance at regularly scheduled monthly workshops on the University of New Mexico campus.

Attendance at the Pre-School Workshop

The beginning of the school year was preceded by a two-day meeting with the participating third-grade teachers. The entire plan of study was outlined, and provisions were made for testing and the keeping of records.

Methods and techniques outlined in the teachers' manuals for the textbooks selected were pointed out and recommended. Future meetings and conferences were planned.

Selection of Tests

The New York Test of Arithmetical Meanings[2] was selected because (1) it places emphasis on the understanding of arithmetical concepts and processes rather than computation, and (2) the test items are read to the pupils in order to de-emphasize reading difficulties. The Level One Test is designed for use at the end of first grade or at the beginning of second grade; the Level Two Test is designed for use at the end of second grade or the beginning of third grade. The Level One Test, consisting of sixty-nine items, tests concepts of number and measurement usually acquired by the child during his first six years. The Level Two Test, consisting of forty-five items, tests concepts of number, number processes, measurement, and standard measures based on content usually taught during the first two years of school. The purpose of the initial testing was to determine each pupil's level of achievement and to plan his work in arithmetic in order to start at his level of understanding.

Tests of one hundred addition and one hundred subtraction combinations were administered in both the fall and the spring to measure growth. In addition, the Otis Quick-Scoring Mental Ability Test, Alpha,[3] was administered in April, 1960.

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[2] J. Wayne Wrightstone, _et al._, _New York Test of Arithmetical Meanings_ (Yonkers-on-Hudson: World Book Company, 1956).

[3] Arthur S. Otis, _Otis Quick-Scoring Mental Ability Test_, Alpha Short Form (Yonkers-on-Hudson: World Book Company, 1954).

Grouping

Throughout the study, considerable attention was given to techniques for teaching in sub-groups within the class. This was necessary since the teachers had never taught arithmetic in sub-groups. After the initial testing program, sub-groups were organized on the bases of test results and conferences between the teachers and the investigator. Grouping was planned to be flexible so that pupils might be shifted from one group to another. Teachers arranged classrooms to gain the most effective use of space, equipment, and materials. The investigator visited the classes once a month and discussed classroom organization, teaching procedures, and pupil progress with each teacher. The teachers were encouraged to use their own ideas and methods that were successful.

A period of forty minutes was established as a maximum time limit for arithmetic classes. This was done so that teachers would not extend their arithmetic schedules during the year.

Materials of Instruction

Basic texts used in the instructional program were Numbers in Action, Level Two, and Seeing Through Arithmetic,Levels Three and Four.[4] Workbooks and flashcards were also used to provide supplementary drill in both fundamental processes and reasoning.

Many concrete objects were used by the teachers in introducing new concepts to develop basic understandings. Examples of concrete objects which were used in a variety of ways included beans, rulers, bottle caps, scales, clocks, coins, thermometers, and different sized bottles. In addition, all teachers used place-value pockets, flannel boards, and abaci. Arithmetic games and experience units were taught in order to provide additional experience using the subject matter and in order to promote pupil interest. Arithmetic corners, reflecting imagination and ingenuity, were developed by the teachers.

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[4] Maurice L. Hartung, et al., Numbers in Action, Level Two, and Seeing Through Arithmetic, Levels Three and Four (Chicago: Scott, Foresman and Co., 1955).

Films and filmstrips were provided by the Indian Research Study staff.[5] Also available were professional magazines, books for enrichment, and professional methods books.

Monthly Workshops

The teachers met as a group on the University of New Mexico campus on the third Saturday of each month. During these meetings, the teachers were encouraged to discuss any problems they were facing and to share with the group any methods or devices which were proving successful in their classes. A portion of each meeting was set aside for a lecture demonstration on some phase of the arithmetic program. These lectures included the characteristics of the number system, teaching the basic arithmetic processes the sequence and scope of the arithmetic program in the elementary school, enrichment activities, use of manipulative materials and devices, and problem solving. These presentations were followed by group discussions.

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[5] Curriculum Filmstrips (10031 Commerce Ave., Tujunga, California: Curriculum Materials Corporation). Filmstrips used included: What is a Fraction?; Writing Fractions; Fractions of a Group; How Large is a Fraction?; Adding Fractions; The Story of Money; The Story of Weights and Measures; The Story of Time; Words for Comparing; More or Less; Cooking by Measure; Buying by Measure; Wholes and Parts; Things in Groups; Visualizing Number Facts; Numberland; Numbers for Beginners; Building Tens and Ones; Tick-Tock, The Learning Clock; Advanced Study of Time; and Money Experiences.

IV. CULTURAL AND EXPERIENTIAL DIFFERENCES

The teachers were requested to keep anecdotal records that might show ways in which a child's background of experience was inadequate for the usual textbook teaching. These anecdotes were expected to reveal differences in thinking patterns and practical uses of number concepts. Anecdotes written by Van Roekel concerning Apache children included the following:

> The Apache Indian children in the third-grade class were atypical with cultural and language barriers and educational retardation in academic achievement. Practice in quantitative thinking may be different for the Apache child.
>
> Ralph, an Apache lad said, "See my new knife," as he proudly displayed it, ready for use. Upon the inquiry of the teacher as to its monetary value, he replied glibly, "Oh, it didn't cost anything; I traded it for a pair of spurs."
>
> Crawford, peering into the far end of the valley and pointing to draw the teacher's attention, said, "See my father, way over there? He's riding my new horse." The teacher asked about the value of the horse. The Apache lad only shrugged his shoulders and said, "It didn't cost any money; my grandmother gave the Navajo man three blankets and he left the horse for me."[6]

Anecdotes concerning Navajo children were written by Brasuel.

> The Indian child's background for the study of numbers has been especially meager. As Hawley says, "They are drastically limited by lack of subsidiary home training which would augment the school work." Many of the Navajo children seldom have money to spend. Until recently almost no money was seen by these children as hides, wool, sheep, rugs, and other products were the media of exchange. The Navajo children probably did not have any experience counting change because the usual method of purchase does not leave any change.

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[6] Gertrude Van Roekel, "The Teaching of the Meaning Theory in Arithmetic in a Third Grade in the Dulce Public School" (Unpublished research paper, The University of New Mexico, Albuquerque, 1960), p. 15.

> The Navajo family brings in a rug or a check to be cashed. The trader may offer part cash and part trade or the whole value of the article may be in trade. The mother then takes the cash if any is to be received and puts it away. Then she begins ordering items until the storekeeper tells her she has almost used up the amount she has to trade. Very carefully she makes the rest of her order so that this amount comes out to the penny, often ending with cans of pop all around.
>
> The families have little tradition of saving money for an emergency. When there is extra money, silver and turquoise jewelry is bought to be pawned in time of need. Navajo children who have money to spend are observed to spend the whole amount in one day with no thought of saving for tomorrow.. . .
>
> Cooking is done by the most primitive methods, and the Navajo child has little concept of standard measures of liquid or dry ingredients in recipes. The Indian mother must use some system of measuring in her weaving, but may not use the standard measure, such as inch, foot or yard. The Navajo child has spent his pre-school years in a round hogan, and probably has little background for the concept of side, or width, or length, or angle, or corner of a room.[7]

V. RESULTS OF THE PROGRAM

New York Test of Arithmetical Meanings

The New York Test of Arithmetical Meanings, Level Two, was administered to 259 third-grade children during the first three weeks of school in September, 1959. A frequency distribution of percentile scores is presented in Table XLVI. Half of the total group scored below the 10th percentile on the Level Two Test. Because such a large proportion of the

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[7] Margery Brasuel, "Intra-Class Grouping for the Teaching of Arithmetic in a Combination Third and Fourth Grade Classroom"(Unpublished research paper, The University of New Mexico, Albuquerque, 1960), p. 22. Cited was Florence Hawley (Ellis), Some Factors in the Indian Problem in New Mexico (Albuquerque: Division of Research, Department of Government, University of New Mexico, 1948), p. 40.

TABLE XLVI

FREQUENCY DISTRIBUTION OF PERCENTILE SCORES OF 259 THIRD-GRADE PUPILS NEW YORK TEST OF ARITHMETICAL MEANINGS, LEVEL TWO--SEPTEMBER 1959

Percentile Interval	Frequency	Percentile Interval	Frequency
95-99	0	45-49	8
90-94	3	40-44	4
85-89	2	35-39	12
80-84	7	30-34	12
75-79	0	25-29	10
70-74	6	20-24	11
65-69	3	15-19	17
60-64	4	10-14	19
55-59	6	5-9	40
50-54	5	0-4	90

group scored below the 25th percentile during the September testing, the Level One Test was administered in October to 179 pupils. The Level One Test provided further information for careful grouping within the classes.

The median performance on the Level One Test for the 179 poorest achievers fell in the 20-24 percentile interval. This testing provided evidence that these third graders were in need of skillful teaching in development of understanding of mathematical concepts for first grade.

When the Level One Test was re-administered to 152 of the 179 third graders in May, 1960, the median score earned was within the 60-64 percentile interval, showing a 40-percentile gain over the October testing.

When the Level Two Test was administered to 218 of the 259 third graders in May, 1960, their median score was within the 70-74 percentile interval. This represented a rather phenomenal growth for the class median from the 10th percentile in September to the 70th percentile in May. While the test is standardized to test readiness for third-grade arithmetic, these pupils were passing to the fourth grade in their respective schools. These test results do, however, show significant growth in the third-grade year. The frequency distribution of percentile scores for the Level One Test in fall and spring is presented in Table XLVII, and the distribution for the Level Two Test is presented in Table XLVIII.

The third-grade pupils were categorized by ethnic groups, and their percentile scores were ranked in a frequency distribution for the fall and spring testing in Tables XLIX and L, respectively. These tables show the following:

1. Forty-eight Anglo children achieved a median percentile score in September in the 45-49 percentile interval, while thirty-seven Anglo children achieved a median percentile score in May in the 90-94 percentile interval.
2. Fifty-three Spanish-American children achieved a median percentile score in September in the 20-24 percentile interval, while forty-four Spanish-American children achieved a median percentile score in May between the 74th and 75th percentile.
3. Thirty-seven Navajo pupils achieved a median percentile score in September in the 0-4 percentile interval, while twenty-seven Navajo pupils achieved a median percentile score in May in the 20-24 percentile interval.

TABLE XLVII

FREQUENCY DISTRIBUTION OF PERCENTILE SCORES OF 152 THIRD-GRADE PUPILS*

NEW YORK TEST OF ARITHMETICAL MEANINGS, LEVEL ONE

Percentile Interval	Fall, 1959	Spring, 1960
95-99	2	27
90-94	0	8
85-89	4	8
80-84	2	6
75-79	7	7
70-74	6	7
65-69	1	9
60-64	4	8**
55-59	6	7
50-54	8	5
45-49	5	5
40-44	6	4
35-39	5	7
30-34	10	3
25-29	8	7
20-24	5**	7
15-19	13	7
10-14	20	6
5-9	13	9
0-4	27	5

*Only pupils included for whom both Fall and Spring scores were obtained.

**Median

TABLE XLVIII

FREQUENCY DISTRIBUTION OF PERCENTILE SCORES OF 218 THIRD-GRADE PUPILS

NEW YORK TEST OF ARITHMETICAL MEANINGS, LEVEL TWO--MAY, 1960

Percentile Interval	Frequency
95-99	32
90-94	21
85-89	15
80-84	15
75-79	18
70-74	9
65-69	8
60-64	10
55-59	7
50-54	4
45-49	10
40-44	4
35-39	7
30-34	5
25-29	5
20-24	3
15-19	10
10-14	6
5-9	12
0-4	17

TABLE XLIX

FREQUENCY DISTRIBUTION OF PERCENTILE SCORES BY ETHNIC GROUPS

NEW YORK TEST OF ARITHMETICAL MEANINGS, LEVEL TWO

259 THIRD-GRADE PUPILS -- SEPTEMBER, 1959

Percentile Interval	Anglo N=48	Spanish American N=53	Navajo N=37	Apache N=53	Pueblo N=68	Total N=259
95-99	0	0	0	0	0	0
90-94	2	0	0	1	0	3
85-89	1	1	0	0	0	2
80-84	6	1	0	0	0	7
75-79	0	0	0	0	0	0
70-74	3	2	0	1	0	6
65-69	2	1	0	0	0	3
60-64	2	1	1	0	0	4
55-59	4	1	0	1	0	6
50-54	2	3	0	0	0	5
45-49	4*	0	1	3	0	8
40-44	1	2	0	1	0	4
35-39	6	2	0	4	0	12
30-34	1	5	1	5	0	12
25-29	3	3	0	3	1	10
20-24	1	5*	1	4	0	11
15-19	3	10	0	3	1	17
10-14	2	4	4	5*	4	19
5-9	5	6	5	11	13	40
0-4		6	24*	11	49*	90

*Median

TABLE L

FREQUENCY DISTRIBUTION OF PERCENTILE SCORES BY ETHNIC GROUPS

NEW YORK TEST OF ARITHMETICAL MEANINGS, LEVEL TWO

218 THIRD GRADE PUPILS -- MAY, 1960

Percentile Interval	Anglo N=37	Spanish American N=44	Navajo N=27	Apache N=47	Pueblo N=63	Total N=218
95-99	14	4	1	13	0	32
90-94	8*	6	0	3	4	21
85-89	5	1	0	6	3	15
80-84	5	3	0	6*	1	15
75-79	3	8*	1	3	3	18
70-74	0	3	0	5	1	9*
65-69	0	3	0	2	3	8
60-64	0	3	1	3	3	10
55-59	0	1	1	0	5	7
50-54	0	2	0	0	2	4
45-49	1	4	2	1	2	10
40-44	0	2	1	1	0	4
35-39	0	1	3	1	2	7
30-34	0	0	1	1	3*	5
25-29	0	0	2	1	2	5
20-24	0	0	3*	0	0	3
15-19	1	1	3	0	5	10
10-14	0	0	2	0	4	6
5-9	0	0	3	1	8	12
0-4	0	2	3	0	12	17

*Median

4. Fifty-three Apache pupils achieved a median percentile score in September in the 10-14 percentile interval, while forty-seven Apache pupils achieved a median percentile score in the 80-84 percentile interval.
5. Sixty-eight Pueblo pupils achieved a median percentile score in September in the 0-4 percentile interval, while sixty-three Pueblo pupils achieved a median percentile score in May in the 30-34 percentile interval.

Tests of Addition and Subtraction Facts

Tests of one hundred addition and one hundred subtraction facts were administered in September and in May. The median raw score earned in September on the one hundred addition facts test was within the 56-60 interval, while the median raw score earned in May on the same test advanced to the 81-85 interval. The median raw score earned in September on the one hundred subtraction facts test was within the 31-35 interval, while the median raw score earned in May on the same test rose to the 61-65 interval. While these increases in median raw scores represent twenty-five points in the addition facts test and thirty points in the subtraction facts test, normal third-grade performance should exceed these achievements. The frequency distributions for fall and spring testing are presented in Table LI to show increases in knowledge of addition facts and in Table LII to show increases in knowledge of subtraction facts.

TABLE LI

GROWTH IN PERFORMANCE OF 211 THIRD-GRADE PUPILS FROM SEPTEMBER, 1959, to MAY, 1960, ON A FIVE-MINUTE POWER TEST OF ONE HUNDRED ADDITION FACTS*

Raw Score Interval	September, 1959 Frequency	May, 1960 Frequency	Change in Frequency
96-100	5	56	+ 51
91-95	4	28	+ 24
86-90	3	21	+ 18
81-85	3	18	+ 15
76-80	7	23	+ 16
71-75	17	16	- 1
66-70	24	14	- 10
61-65	32	13	- 19
56-60	23	6	- 17
51-55	17	8	- 9
46-50	13	4	- 9
41-45	17	0	- 17
36-40	11	0	- 11
31-35	8	2	- 6
26-30	4	0	- 4
21-25	10	1	- 9
16-20	3	1	- 2
11-15	5	0	- 5
6-10	3	0	- 3
1-5	2	0	- 2

*Only pupils included for whom both Fall and Spring scores were obtained.

TABLE LII

GROWTH IN PERFORMANCE OF 212 THIRD-GRADE PUPILS FROM SEPTEMBER, 1959, TO MAY, 1960, ON A FIVE-MINUTE POWER TEST OF ONE HUNDRED SUBTRACTION FACTS*

Raw Score Interval	September, 1959 Frequency	May, 1960 Frequency	Change in Frequency
96-100	0	22	+ 22
91-95	0	4	+ 4
86-90	0	14	+ 14
81-85	0	17	+ 17
76-80	1	12	+ 11
71-75	2	15	+ 13
66-70	5	21	+ 16
61-65	5	14	+ 9
56-60	10	28	+ 18
51-55	18	24	+ 6
46-50	22	13	- 9
41-45	13	8	- 5
36-40	25	5	- 20
31-35	31	3	- 28
26-30	15	2	- 13
21-25	13	3	- 10
16-20	7	2	- 5
11-15	10	0	- 10
6-10	16	3	- 13
1-5	19	2	- 17

*Only pupils included for whom both Fall and Spring scores were obtained.

VI. CONCLUSION

This chapter has been a preliminary report of data gathered in selected third-grade classes concerning the use of a meaningful approach to the teaching of arithmetic. The report is brief and inconclusive with regard to its original purpose. The program used in the 1959-60 school year has resulted in substantial gains in performance on the New York Test of Arithmetical Meanings, Levels One and Two, but no comparative data were obtained to show how much growth might have been expected if the program described had not been followed. The tests used do not measure whether the third-grade classes were less educationally retarded at the end of the year than they would have been if taught by different methods, or whether this special instruction resulted in greater than normal growth during the school year.

It is quite difficult to assess objectively the effects of the variables introduced in this one-year program. A second year of the experiment would likely have produced results that could be more adequately evaluated. Continued emphasis on the supervision of teaching methods, however, is clearly indicated.

PART IV

SUMMARY AND RECOMMENDATIONS FOR FURTHER RESEARCH

CHAPTER XII

SUMMARY AND RECOMMENDATIONS FOR FURTHER RESEARCH

I. INTRODUCTION

The Indian Research Study embraced five major objectives at its inception. These five objectives were:

1. To study the effects of cultural differences among the minority ethnic groups in New Mexico;
2. To translate cultural differences into causal factors in understanding overt behavior in the classroom;
3. To develop, experimentally, methodology in terms of child needs;
4. To investigate ways to interpret the program of the school to the parents;
5. To evaluate the undergraduate program of teacher education in terms of needs revealed by this study.

Chapters II, III, IV, and V in this report have attempted to show the sociological implications for teachers in understanding their own culture and the cultures of the children whom they teach. These chapters have discussed conflicts in cultural values, divergent ways in which different peoples strive for their life goals, and needs for the mutual respect and tolerance for the attitudes, beliefs, and ideals which each group possesses. In addition, these chapters have cited the extreme amount of educational retardation that generally exists in schools enrolling children from the sub-cultures.

Some discussion has been devoted to the interdependence and interrelationship of language and culture, the frustration of people in marginal cultures faced with "losing their language," and the considerable extent to which educational retardation in New Mexico is rooted in the learning of English as a second language.

Chapter VI has revealed a lack of awareness of the language, culture, and experience barriers of children from the sub-cultures. Pressing problems of classroom teachers include those of understanding themselves and their life goals and value systems. This understanding is a prerequisite to the adequate understanding of cultural values of their students.

Chapters VII, VIII, IX, X, and XI have explored problems of reading retardation, difficulties in understanding English as a second language, teaching oral English to kindergarten children, problems in teaching science concepts as presented in standard elementary science textbooks, and adequate understanding of arithmetic concepts.

II. RECOMMENDATIONS FOR FURTHER RESEARCH

Three years is an inadequate period of time to state and define problems, to set up hypotheses to test, and to carry on field work for sufficiently long periods in order to reach valid and reliable conclusions. It is, therefore, recommended that the time required for subsequent research receive careful consideration. The need for continuing research in New Mexico is quite evident. The types of problems in greatest need of investigation are categorized as those pertinent to (1) cultural differences, (2) bilingual problems, and (3) remedial education.

Cultural Differences

Studies rooted in the cultural difference would investigate socio-cultural factors in classrooms, adjustments to be made in pre-service education programs for teachers, improved communication between the parent and the school; and problems in motivation of learning.

Studies are needed that will measure the social distance between middle-class teachers and minority group students. That there is lack of communication between teacher and student is evident from students' achievement test data. Also, Ulibarri demonstrated that there is little awareness of socio-cultural factors on the part of teachers.[1] Subtle combinations of empathy and knowledge of socio-cultural conditions need to be delineated so that teachers will establish adequate communication in their classrooms. These studies might include:

1. Attempts to sensitize teachers to socio-cultural differences through in-service education programs, such as workshops, conferences, and case study reports.
2. Extensive use of various sociometric techniques in order to reveal the extent of interaction of children in classrooms. Do they accept each other? What behavior characteristics

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[1] Horacio Ulibarri, "Teacher Awareness of Socio-Cultural Differences in Multi-Cultural Classrooms" (unpublished doctoral dissertation, The University of New Mexico, Albuquerque, 1959).

affect acceptance or non-acceptance of an individual? The sociogram on the following page shows little interaction between ethnic groups in a tri-cultural fifth-grade classroom. How should such a sociogram be interpreted?

Pre-service education programs are needed to make prospective teachers aware of special educational problems in the areas of cultural differences, language barriers, and limitations in life space of children. Two alternatives exist toward the solution of this problem. College instructors in the academic disciplines of anthropology, sociology, and psychology might make specific provision in their course outlines to teach principles of child growth and development, giving adequate emphasis to the ways in which social, emotional, moral, and spiritual growth and development may be at variance with the dominant culture in the minority groups. Differences in overt behavior patterns and conflicts in social values would need to be stressed. In contrast, or perhaps complementary, to this solution, instructors in courses in methodology might plan their course outlines to help prospective teachers develop specific means of adapting their teaching practices in terms of the expected overt behavior of children with cultural differences, language barriers, and meager life experiences. Either of these two alternatives would require a new sophistication in subject matter background on the part of the instructors.

Improved communication is needed with parents of children from homes where little or no English is understood. Provision for teachers to visit in the homes of children, to understand better the problems of parents in keeping children in school, and to learn ways of interpreting the program of

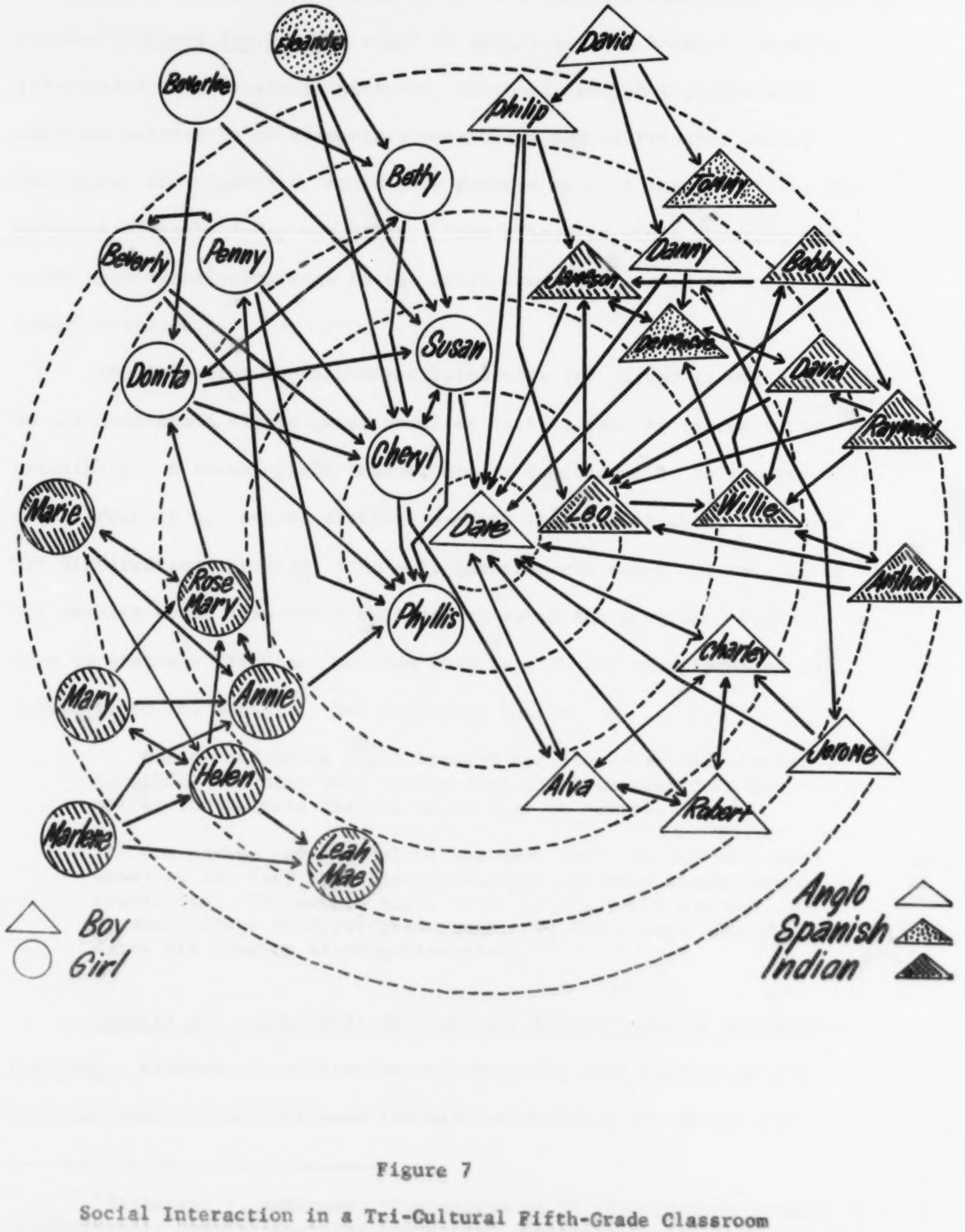
Eleander
Bettorlee
David
Philip
Betty
Tommy
Beverly
Penny
Jameson
Danny
Bobby
Susan
Donita
David
Raymond
Cheryl
Marie
Leo
Willie
Dave
Rose Mary
Anthony
Phyllis
Charley
Mary
Annie
Jerome
Helen
Alva
Robert
Marlene
Leah Mae
Boy
Girl
Anglo
Spanish
Indian

Figure 7

Social Interaction in a Tri-Cultural Fifth-Grade Classroom the school to the parents are needed. As a specific example, a project to prepare a Primer for Parents might be undertaken. A booklet, heavily illustrated with drawings, pictures, cartoons, and photographs with captions written in an elementary vocabulary and distributed widely throughout the community, could show parents many of the principles and purposes of present-day education. Such a booklet would probably need to be specifically oriented to the local community served by a particular school district.

The following two anecdotes illustrate the extent to which parents do not understand simple questionnaires sent to them by teachers and principals. A second-grade teacher sent a questionnaire to the parents of children in her school district seeking information about the local "TV Kindergarten" program. The only question she asked was whether or not parents would like their children to watch the program. Parents were to indicate "Yes" or "No" and then to sign the questionnaire and return it to the school. Two reactions follow.

> One second-grade pupil brought her five-year-old brother to school the next day, saying that the principal told her mother in the note that he might come to school.
>
> One parent came to school the next day. He was very much upset by the fact that his son was getting only kindergarten experience. The parent said, "Fred is six years old now, and we want him to do first-grade work. We don't want him to waste his time on kindergarten stuff."[2]

Studies are needed that will provide better means of motivating learning. Problems in motivation are among the most serious of all problems confronting classroom teachers of children who do not place great value on formal education and who do not internalize the long-range goals which the teacher accepts without question. One educational psychologist maintains that "in school as well as elsewhere, the most important motives are the wants and aspirations of the individual."[3]

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[2] Katherine V. McNerney, "Evaluation of TV Kindergarten Program in a Predominantly Spanish-American Community" (Research in Progress, The University of New Mexico, Albuquerque, 1960-61).

Motivation for learning is largely culturally determined. Shaffer and Shoben define a motive as "a complex, socially learned pattern involving situation, drive, mechanism, and end-result."[4] They further describe motives in their writing:

> Motives to seek the approval of other people, to get attention to gain sympathy, to be with others rather than alone, and to be recognized as a person of worth, are among the dominant urges of many cultures.[5]
>
> A closely related pattern of social motivation is represented by tendencies to submit to the customs of one's group, to conform, to do the expected thing, and to avoid blame and criticism.
>
> Our culture gives many examples of motives to excel, to succeed, to overcome obstructions, to worst a rival, to complete a task once begun and, in general, to master persons and situations. This is one of the most variable patterns of motivation from one culture to another, and is very weak in some societies.[7]

The motives of an Indian child are rooted in a deep-seated cultural heritage of which his teacher may be unaware. Some of the child's strongest motives may be those of holding tenaciously to the Indian language, values, and practices which he suspects his non-Indian teacher is working vigorously to eradicate. As an example of the difficulty of motivating Indian students, a high school music teacher reported that he had a Navajo student in the band who showed excellent promise. He told the student that if he would practice more, he could gain first chair. After a few weeks of no noticeable improvement, the music teacher asked the boy if he had been practicing more. The student said that he had not because he did not want first chair. This suggests that excelling, mastering situations, or worsting a rival may not be strong motives in Navajo culture.

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[3] James B. Stroud, Psychology in Education (New York: Longmans, Green and Co., 1946), p. 230.

[4] Laurance F. Shaffer and Edward J. Shoben, Jr., The Psychology of Adjustment (Boston: Houghton Mifflin Co., 1956), p. 85.

[5] Ibid., p. 86.

[6] Ibid., p. 87.

[7] Ibid., p. 88.

Another example of difficulties with motivation is that primary school teachers have often found that "Show and Tell" is an excellent medium for motivating oral language expression and furthering the personal satisfaction of the children who participate. However, since young Indian children may have been taught by their families not to reveal family situations to non-Indians, "Show and Tell" may not be a popular activity in schools in which they are enrolled.

Schools need to seek out, to define, and to analyze those motivations which individual teachers find successful and to provide for the necessary exchange of ideas among teachers so that successful motivations will become more widely known and used.

Bilingual Problems.

In the Puerto Rican Study, Morrison says that it is necessary to

> Recognize . . . the teaching of non-English speaking children as an area of specialization that cuts across many subject areas. . . . It recognizes the relations of the child's native vernacular to his social-cultural heritage, the relations of his learning English to his new social-educational-cultural environment. Here is an area of specialization that draws on the communication arts, the modern languages,. . . anthropology, psychology, and sociology.[8]

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[8] J. Cayce Morrison, Director, The Puerto Rican Study, Sponsored by the Board of Education of The City of New York under a Grant-in-Aid from The Fund for the Advancement of Education (New York: Board of Education, 1958), p. 240.

Only a beginning has been made in relating the cultural difference to problems of methodology. New efforts are indicated to cope with the problem of educational retardation which is resulting from the language, culture, and experience barriers. In New Mexico, where English is a second language for approximately 50 per cent of the school children, studies pertaining to the teaching of English as a second language are most strongly indicated. Results of such studies should be applicable whereever bilingual problems exist. Types of studies might include:

Tests to give teachers objective measures of the extent to which various facets of the language are obstacles for children in their classes.

A battery of such tests should measure the ability to understand idiomatic expressions, slang expressions, multiple meanings, opposites, analogies, figures of speech, and references to mythological and Biblical characters. These tests, standardized on the performance of typical English-speaking, middle-class elementary school pupils, would give teachers comparative results for all school children for whom English is a second language. The need for such testing instruments is accentuated by the lack of awareness on the part of public school personnel of the nature of bilingual difficulties. The stages of bilingualism, as emphasized by Mahlerbe[9] are not generally understood. Children who function at a "low" stage of English proficiency are often discriminated against and thought to be lacking in innate ability.

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[9] E. G. Mahlerbe, The Bilingual School (London: Longman's, Green and Co., 1946), pp. 17-29.

Results of an exploratory test of common English idiomatic expressions was discussed in Chapter VII. In a sixth-grade population, Anglos performed significantly better than did Navajo, Pueblo, Apache, and Spanish-American pupils.[10] Exploratory tests of multiple meanings, analogies, and antonyms, also discussed in Chapter VII, revealed that a fourth-grade Anglo norming group performed significantly better than did sixth-grade Navajo, Pueblo, Apache, and Spanish-American students.[11] Experimental work is needed to find ways to help these severely language-handicapped children.

Analytical studies to reveal the nature of language difficulties faced by Indian and Spanish-American children who learn English as a second language.

> We may sort out difficult points fairly satisfactorily into four categories: phonological, grammatical, lexical, and cultural. Phonological difficulties are those relating to the formation and interpretation of the sounds. Grammar has to do with the forms and arrangements of words. Lexical problems are problems of vocabulary. Cultural problems and difficulties arise because speakers of Language A differ from speakers of Language B not only in the way they talk, but also in the way they live and in the way they look at the world.[12]

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[10] Maurine Dunn Yandell, "Some Difficulties Which Indian Children Encounter with Idioms in Reading" (Unpublished Master's thesis, The University of New Mexico, Albuquerque, 1959).

[11] Christine Dudding, "An Investigation into the Bilingual Child's Comprehension of Antonyms" (Research in Progress, The University of New Mexico, Albuquerque, 1960-61); Stephen G. Hess, "A Comparative Study of the Understanding Which Bilingual Students Have of the Multiple Meanings of English Words" (Research in Progress, The University of New Mexico, Albuquerque, 1960-61); and Veta W. Mercer, "The Efficiency of Bilingual Children in Understanding Analogies in the English Language" (Unpublished Master's thesis, The University of New Mexico, Albuquerque, 1960).

[12] Earl W. Stevick, Helping People Learn English (Nashville: Abingdon Press, 1957), p. 26.

As an example of the practical value of phonological studies for the primary teacher, studies of the differences in phonemes in the two languages (the child's vernacular and English) could result in specific methodology for primary classroom teachers for the elimination of dialect, keener auditory discrimination of new sounds to be learned, and production of phonemes foreign to the first language.

Supplementary lesson plans for teachers' manuals to give teachers specific help in teaching children for whom English is a second language.

This type of study would necessitate intensive editorial work on lesson plans of commercially prepared textbooks. The purpose would be to make teachers conscious of such problems as differences in language patterning, language phonemes, vocabulary, and socio-cultural connotations in the semantics of words.

The status of bilingualism in New Mexico, as revealed in this study, poses two very important questions.

1. Are the children from the Indian and Spanish-American backgrounds functioning at Mahlerbe's "low" stage of knowing English and, hence, giving only a superficial appearance of knowing the English language?

2. In their attempts to be bilingual and to use a minimum of vocabulary in two languages without much facility in either of them, do these pupils function on a very low level of equilingualism? In other words, are they more nearly nonlingual than bilingual?

Answers are needed to these questions so that more appropriate remedial procedures may be instigated.

Remedial Education

It has been apparent throughout this three-year study that teachers must be prepared to provide remedial instruction for those Indian children making the adjustment into the public schools. Learning in school needs to be rooted in the child's background of experience in order to be meaningful. Schools need to know more about the experiences which the child brings with him, and they need to make adequate provision for the older child who is academically achieving several years below his expected grade placement. Studies such as the two suggested below should be fruitful.

> Measures of children's concepts in English and in their vernacular at the time of starting school would be useful in assessing their readiness for formal teaching in English.
>
> The use of the non-standardized "Test of Oral English for Children for Whom English Is a Second Language" is an effort in this direction.[13] Another example might be that of number readiness. Research is available to show which number concepts are possessed by "average" English-speaking kindergarten children. A check list could be built and translated into the child's language. It would then be possible to determine whether or not the child possesses certain number readiness knowledges in his first language. It would be helpful to the teacher to know to what extent he must teach only the English translation of a concept or whether he must both develop the concept and teach the language.

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[13] "Test of Oral English for Children for Whom English Is a Second Language" (Unpublished test developed by the staff of the Indian Research Study, The University of New Mexico, Albuquerque, 1959).

More adequate methods for meeting problems of remedial teaching and school dropouts are needed.

The presence of many adolescents in junior high schools who possess extremely limited English language power poses many administrative and guidance problems. Different programs should be evaluated experimentally. Should emphasis be given to special tutoring in use of oral English? to tutoring in sequential reading skills in usual remedial reading instruction? to partial segregation in grouping for special instruction? to efforts to assign special language teachers to small groups of bilingual children?

Different methods of helping non-readers in various school grades certainly need to be evaluated.

III. SUMMARY

Additional research has been suggested as being essential to helping solve the problems of the adjustment of Indian children into the public schools of New Mexico. Research studies in the areas of cultural differences, bilingual problems, and remedial education, the development of language test instruments, and suggestions for improved methodology can be applicable not only for New Mexico, but also for other areas of the country where children from minority ethnic groups are being assimilated into public school systems, bringing with them problems of native languages, different cultures, meager experience backgrounds, and educational retardation—problems which teachers must be prepared to face.

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APPENDICES

APPENDIX A

QUESTIONNAIRE MEASURING TEACHER UNDERSTANDING OF SOCIO-CULTURAL DIFFERENCES IN CHILDREN

Developed by Horacio Ulibarri

QUESTIONNAIRE

You have been selected as part of a sample of the teachers in New Mexico to be interviewed concerning the following questionnaire. Your cooperation is solicited in answering the following questions with complete honesty. The entire questionnaire is anonymous. No teachers' names will be made public at any time, and the information will be kept confidential. Only the compilation of the results will be made public.

Official Position held____________________ If teacher, grade taught____________

Degree(s) held______________________ Institution(s)____________

____

Number years of teaching experience: In state______ Out of state_____
(Including this year)

Have you taught these groups of children: _____ Anglo ____________ Spanish-American _____ Indian

How many college hours (approximately) do you have in:

Education______________ Sociology________________

Educational Psychology______ Social Psychology___________

Educational Sociology______ Anthropology_______________

Of what ethnic group do you consider yourself a member?

_____ Anglo ____________ Spanish American _______ Indian ______________ Specify, if other

The questionnaire is scaled from 1 to 5, or "very little" to "very much."

very little	below average	average	above average	very much
1	2	3	4	5

Please circle the number which most appropriately indicates your opinion regarding each item. Answer each question as well as you can. If in doubt, select the answer which is closest to your opinion.

very little	below average	average	above average	very much
1	2	3	4	5

1. All children in school, regardless of culture or social background, have certain psychological needs in common. Among these are the needs for belonging, participation, recognition, and security.

   To what extent do you believe these needs of the following children can be met with a curriculum that provides essentially the same program for all children?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

2. How the psychological needs of the children will be met depends on an awareness of the cultural backgrounds of the children.

   To what extent do you believe the school meets the psychological needs of the following children?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

3. The school is one aspect of, and reflects the values of, the dominant society.

   To what extent do you believe the out-of-school environment of the following children is compatible with the environment of the school?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

4. Most school curricula are primarily oriented to the future. They emphasize hard work in the present in order to be rewarded in the future.

   To what extent do you believe the following children are able to see this future-orientation and to adjust to working hard in the present in order to be rewarded in the future?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

5. In the operation of the school, great emphasis is placed upon competition.

   To what extent do you believe the home environment of the following children develops the value of competition?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

very little	below average	average	above average	very much
1	2	3	4	5

6. Society today places much emphasis on scientific interpretation of natural phenomena.

To what extent do you believe the following children are receptive to scientific interpretation of natural phenomena?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

7. One of the broad objectives accepted for implementation in the schools is that of civic responsibility.

To what extent do you believe that the following children accept and practice school-taught concepts of citizenship in their out-of-school life?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

8. One of the reasons for bringing the Indian children into the public schools was to afford them an environment where they would learn to adjust to, and interact with, Spanish American and Anglo children.

To what extent do you believe the following children are adjusting to, and interacting with, the other ethnic groups?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

9. New Mexico still has one of the highest infant mortality rates in the nation. It also has one of the highest rates of health deficiency.

To what extent do you believe the following children accept and practice rules of cleanliness and health?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

10. Our society is built to a major degree on its economic efficiency. This economic efficiency entails the ability to earn money and to spend it wisely.

To what extent do you believe the following children are learning values of economic efficiency?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

very little	below average	average	above average	very much
1	2	3	4	5

11. The concept of life-space entails the following three aspects: (1) the physical environment that the child lives in; (2) the artifacts, i.e., material things, that he manipulates; and (3) the persons that he interacts with.

In your way of thinking, how enriching is the life-space of the following children?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

12. An educational principle contends that the vicarious experiences acquired in the classroom are made meaningful to the child only as he can relate them to his direct experiences in life.

To what extent do you believe that the experiences in the classroom are meaningful to the following children?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

13. Parental motivation should entail an understanding of the value of education and not a mere "blind faith" in education.

To what extent do you believe the following parents have placed a true value on education?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

14. Parental motivation is a great determining factor in the success that children have in school.

To what extent do you believe the following children are motivated by their parents?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

15. Another determining factor in the child's success in school is the economic means at his disposal for his education.

To what extent do you believe that the following children are free from disadvantages caused by poor financial conditions of their parents?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

very little	below average	average	above average	very much
1	2	3	4	5

16. The typical curriculum is highly verbal in content.

To what extent do you believe this verbal emphasis is advantageous to the following children?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

17. Most curricula are geared to middle-class Anglo culture. Thus it seems that middle-class Anglo children should be the most proficient in school work. This, however, does not exclude children from other cultures or social classes from achieving up to par as far as grade levels are concerned.

To what extent do you believe the following children are achieving at grade level in school?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

18. The range of reading abilities varies from group to group without regard to culture or social background.

To what extent do you believe the following children are able to use the regular textbooks prepared for their grade level?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

19. In general, the Indian children talk in their native tongue with one another and at home; the same generally holds true for the Spanish American children.

To what extent do you believe the following children are proficient in oral expression in the English language?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

20. Many studies have been made on the intelligence of bilingual children. Some of these studies have stated that such children score at the same level, or higher, than children who speak only one language; some studies have concluded that they score lower.

To what extent do you believe the difference in general intelligence explains the difficulty each group has in adjusting to the school curriculum?

Indian	1	2	3	4	5
Spanish American	1	2	3	4	5
Anglo	1	2	3	4	5

APPENDIX B

THE IDIOMS TEST
Maurine D. Yandell and Miles V. Zintz

THE MULTIPLE MEANINGS TEST Stephen G. Hess

THE ANALOGIES TEST Veta W. Mercer

THE ANTONYMS TEST Christine C. Dudding

A READING TEST

(Idioms, proverbs, and figures of speech used in elementary school readers.)

prepared by

Maurine Dunn Yandell, Sixth Grade Teacher
Gallup-McKinley County Schools

and

Miles V. Zintz, Director
Indian Research Study
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DIRECTIONS

This is a test to find out if you know the correct meanings of many unusual expressions you find in your reading. For each test item, select the best answer and look at the letter in front of it. Find that number on the separate answer sheet and make a circle around it.

Read the sample item silently while your teacher reads it aloud:

A. If your heart is still set on a fleece, I'll bring you a few in the morning.

"If your heart is still set on means:

a. If your heart is quiet;
b. If you want a fleece very badly;
c. If you have a fleece on your heart;
d. A heart is a place on a fleece.

Since the expression means that the person wants a fleece very much, letter b is circled on the answer sheet.

A. a [✓ b] c d

Do all of the items in this way. Think what the part of the sentence that is underlined means. Be sure your letters on the answer sheet correspond to the items in the test booklet.

PART ONE

____1. "Saved by a hair! Just by a hair!" yelled Tom.
a. by using his head
b. just barely made it
c. safe and secure
d. by sticking his head out

____2. "Then, as if he were rooted to the spot, Tom stood still, overcome with surprise."
a. touching the ground
b. right on the spot
c. unable to move
d. with his feet in a hole

____3. "Tom was tired enough to drop in his tracks, as his grandpa used to say."
a. to drop his load
b. to follow the tracks
c. stop where he was without moving
d. to follow in his footsteps

____4. "Mark my words, you'll spoil that girl."
a. take my advice
b. words are important
c. what I say is always right
d. place a mark on the words

____5. "Go no faster than a trot, and keep your head about you."
a. keep your head with you
b. hold your head still
c. stay awake
d. be sensible and act wisely

____6. "When you are boarding around doing a little of this kind of work and a little of that, you grow sick and tired of being a Jack-of-all-Trades."
a. being good at all trades
b. doing a little of all kinds of work
c. restless like a Jack-in-the-box
d. not doing any work well

____7. "Because Ma had a warm spot in her heart for Sam, she talked to Tom after Sally was in bed."
a. was sick because of Sam
b. Sam made her angry
c. special liking for Sam
d. liked everyone

____8. "My mouth is watering, he said to Ma."
a. wanting something badly
b. is very sick
c. needed a drink
d. has water in his mouth

____9. "He won't be worth his salt for a long time to come."
- a. worth very much
- b. worth as much as salt
- c. worth what he eats
- d. uses too much salt

____10. "I leave it to you to break him in."
- a. break his habits
- b. to get him inside
- c. to hurt him
- d. get him used to things

____11. "Before another year comes round, the cabins will begin to climb the hill."
- a. cabins will be built higher
- b. climb the hill to get to the cabins
- c. cabins will be built farther up the hill
- d. cabins will have to be moved

____12. "There is a sight of hauling still to be done."
- a. too much to see
- b. hauling too much
- c. seeing what is hauled
- d. a lot of hauling

____13. "You are a better man than I am; it takes you to bring home the bacon."
- a. to feed the children
- b. to get things done
- c. to bring home food
- d. to be good

____14. "Ma had to piece out the supper with sausage, ham, and headcheese."
- a. to serve small pieces
- b. serve the supper
- c. leave out the extra food
- d. add more food to have enough

____15. "Don't bite my head off."
- a. don't be so cross
- b. don't get so close
- c. don't bite my head
- d. don't be so loud

____16. "During the gold rush, many people were staking a claim."
- a. taking a stake on the claim
- b. driving stakes in the ground to mark boundaries
- c. claiming land that wasn't theirs
- d. making claim to a stake

____17. "A miner spent much of his time panning out."
- a. taking the pan out of the water
- b. washing earth and gravel in a pan in search of gold.
- c. digging for gold
- d. putting the pan in and out of water

____18. "And the captain always saw through everyone."
a. saw everyone in view
b. looked through everyone
c. understood everyone
d. saw everyone's faults

____19. "When pioneers blazed a trail, they chipped the tree trunks at a certain height."
a. set the trail afire
b. followed a trail
c. made a new trail
d. hurried down the trail

____20. "The man felt heavy at heart, for he thought it was better to share the last bite with the children."
a. big hearted
b. sad and worried
c. his heart was a load
d. thought he had gained some weight

____21. "Then it's all set, said Toto happily."
a. it's all gone
b. it's all ready
c. it's all there
d. it's all still

____22. "When I give a dog, I give him for good."
a. I treat him good
b. give him for keeps
c. a good way to give him
d. give him to stay awhile

____23. "Travel on the magic carpet of printed words" means
a. to go many different places in stories
b. to go on a carpet in a book
c. to sit on a carpet while we travel
d. to sit on a magic carpet and read

____24. "This California weather changes quickly in the orange belt."
a. place where oranges are grown
b. the color of something we wear
c. place where oranges are sold
d. a belt made of oranges

____25. "What will Barnum do next, was on everybody's tongue."
a. everyone is talking at the same time
b. something is on everybody's tongue
c. everyone is discussing it
d. on the tongue of everybody

____26. "Killing the goose that laid the golden egg" means
- a. Things worth having are worth waiting for.
- b. Be kind to others.
- c. Don't count your chickens before they are hatched.
- d. Something valuable may be lost by being greedy.

____27. "The lad took to his heels as if bewitched."
- a. to take his heels to the witch
- b. flew away
- c. to run behind someone's heels
- d. ran as fast as he could

____28. "Thanks for the tip, Chief," replied the reporter."
- a. keep your hands to yourself
- b. thanks for the sharp object
- c. thanks for the money
- d. thanks for the information

____29. "Got cold feet, did you" teased one of the boys."
- a. became afraid
- b. became very cold
- c. got cold and went home
- d. feet were cold

____30. "Now I have let the cat out of the bag," chuckled Mr. Burd."
- a. let the cat jump out of the bag
- b. forgot to tie the string
- c. told the secret
- d. let the cat make too much noise

PART TWO

____31. "Big Bill Turner, crack engineer, of the Prairie Flyer, was bringing this "puffing billy" home to roost!"
  a. returning to its starting place
  b. roosting like a bird
  c. perching in the roundhouse
  d. starting back home.

____32. "But see to it that you keep your hands to yourself."
  a. do not help with the work
  b. my business is not yet your business
  c. keep your own hands
  d. leave things alone

____33. "It would suit me to a T," grinned Pierre."
  a. his suit fit him
  b. I'd agree to the T
  c. I'd like it fine
  d. not in agreement with

____34. "I tell you those were the days."
  a. more difficult days
  b. longer days
  c. easier days
  d. days to remember

____35. "You can see for yourself he's learning all there is to know about railroading from the ground up."
  a. all the different kinds of railroading jobs
  b. from the rails to the cars
  c. groundwork and engines
  d. the dirty jobs

____36. "What kind of monkeyshines do you call this, Tom?"
  a. acting like a monkey
  b. a shining face
  c. a trick or a prank
  d. acting in a strange way

____37. "So that's the reason for this Sunday-go-to-meeting attire."
  a. finest clothes
  b. clothes worn to meet someone on Sunday
  c. clothes that are tiring
  d. everyday clothes

____38. "I'd be the laughing stock of the town."
  a. laughing with the town
  b. laughingly taking stock of the town
  c. the town clown
  d. made fun of

____39. "He did a splendid job of locking the barn door after the horse was stolen."
- a. looking for the horse
- b. being careful after it's too late
- c. locking the door to protect the horse
- d. being careful before danger comes

____40. "We have always insisted that Tom Fuller was worth his weight in gold."
- a. worth as much as gold
- b. weighs as much as gold
- c. very valuable
- d. very important

____41. "Gave him his walking papers not ten minutes ago," announced Mrs. Gray."
- a. gave him papers to leave
- b. told him to walk away
- c. fired him
- d. replaced him with someone else

____42. "I've talked to the man who owns it, and we can get it for a song."
- a. if we sing him a song
- b. for a small amount
- c. for nothing
- d. for a little music

____43. "By and by an idea began to dawn upon them."
- a. the sun came up
- b. it became brighter
- c. began to understand
- d. began to see them

____44. "I'll be beat if you ever saw a town with as much spunk for pulling itself out by the bootstraps."
- a. pulling off its boots
- b. getting along without help
- c. using bootstraps to pull itself up
- d. becoming better

____45. "So you've definitely decided to let Hastings go to the dogs."
- a. go from bad to worse
- b. to do what is right
- c. play with the dogs
- d. go with the dogs

____46. "Automobile riding lost some of its edge for Tom."
- a. he didn't like it any more
- b. lost its beauty
- c. lost its thrill
- d. became tiring for him

____47. "Once you set your eyes on that car, I can call from now until kingdom come."
- a. from now on
- b. from here to heaven
- c. until the other kingdom
- d. until you come with us

____48. "You're a chip off the old block," laughed Captain Joe."
a. the part that's good
b. just like your father
c. solid like a block
d. a small part

____49. "But I'll show ye a bit of old time fiddlin', just to start the judges off on the right track."
a. to start the judges down the track
b. to get the judges started
c. it's hard to find the right track
d. to track the judges down

____50. "In this story Betsy turned the tables on several people."
a. made the people move over
b. changed her mind
c. surprised everyone
d. turned the tables around

____51. "The black clouds let fall sheets of rain."
a. squares of rain
b. solid rain
c. heavy downpour of rain
d. white rain

____52. "I am empty as a gourd," he sighed."
a. had seeds inside himself
b. shaped like a gourd
c. hollow inside
d. made a strange noise inside

____53. "With a sweep of his arm, he took in the countryside."
a. with a broom in his hand
b. with his arm above his eyes
c. a movement of his arm
d. moving himself around

____54. "Actions speak louder than words" means
a. actions mean more than words
b. words mean more than what we do
c. words are not important
d. actions always come before words

____55. "Think I'll call him 'Greased Lightning'," Zeke replied."
a. as bright as lightning
b. as fast as lightning
c. hot and dangerous
d. stormy and loud

____56. "The cowboys were going to cut the herd."
a. to drive part one place and part to another
b. to brand the cattle
c. to butcher or cut up part of the herd
d. to make the cattle run

____57. "Pike's Peak or bust" means
- a. I'll get there or die trying
- b. the trip is too hard
- c. want to see Pike's Peak
- d. Pike's Peak is the place to burst

____58. "He talked for some time, but he couldn't convince Uncle Lem, who was as stubborn as a mule."
- a. as agreeable as a mule
- b. as difficult to manage as a mule
- c. as yielding as a mule
- d. gave in too easily

59. "Uncle started in a beeline for the river."
- a. following an imaginary line
- b. straight and fast
- c. busy like a bee
- d. with a bee after him

60. "Most of these were given to blind flying."
- a. a blind man flying
- b. too dark to see
- c. flying with a blindfold
- d. flying only with instruments

PART THREE

____61. "She wants him to come and live with her, and he is planning to pull stakes this summer."
a. to pull up sticks
b. to go to live in another place
c. to pull stakes to earn money
d. to go back to his home town

____62. "But I'm getting on, and you're my nearest relatives."
a. going on
b. getting along fine
c. going strong
d. getting older

____63. "He says bloods' thicker than any bank roll."
a. relatives are more important than money
b. blood is worth more than money
c. blood can be spilled over a bank roll
d. there is more blood than money

____64. "But Mother, who understood thoroughly how Lucy was feeling, tried to turn the matter off lightly."
a. to turn away
b. to turn off the lights
c. to dismiss the matter without seriousness
d. to turn the matter off quietly

____65. "The old lady was kindhearted, but a bit sharp-tongued."
a. her tongue was too long
b. she talked too much
c. her tongue was too sharp
d. she spoke harshly

____66. "The Hardings went to bed in a pleasant glow of anticipation."
a. glowing and happy
b. happy with remembrance
c. to anticipate a glow
d. expecting something pleasant

____67. "Uncle John doesn't expect us for five or six months, and we've burned our bridges behind us."
a. already crossed the bridge
b. burned everything we don't need
c. made our decisions and can't change our minds now
d. set fire to the bridge after we crossed it

____68. "May I give you a lift, sir?" he asked."
a. lift you up
b. give you a ride
c. help you lift something
d. give you something light

____69. "They're a little scared of me maybe, but they ought to know a barking dog never bites."
- a. a barking dog isn't dangerous
- b. a dog that bites doesn't bark
- c. someone who talks mean may not really be mean
- d. someone who acts mean usually doesn't talk

____70. "You're new at this business," said Monty Green. "Breaking the ice is what's hard."
- a. ice is hard to break
- b. beginning something new
- c. to begin to break ice
- d. breaking a new record

____71. "I've lost a man who got a touch of sun and got sick."
- a. touched sunshine
- b. got too much sun at one time
- c. was out of the sun too long
- d. the sun burned him

____72. "Then he sat bolt upright, as though a charge of electricity had gone through him."
- a. sat on the right side of a bolt
- b. sat up on the right bolt
- c. sat up very straight, immediately
- d. had been told to sit uprightly

____73. "He who steals a good name is not made richer."
- a. honest effort is required to earn a good reputation
- b. stealing a good name is not a good way to get rich
- c. stealing a good name is not the easiest way to get it
- d. a good name is not as valuable as gold

____74. "I'd work like a steer, I swear I would."
- a. in a straight line
- b. very hard
- c. like a good driver
- d. as often as a steer

____75. "She moved from pillar to post."
- a. from a soft place to a hard one
- b. moving in order to get a new job
- c. from one place to another
- d. from a big house to a small one

____76. "A tall tale" means
- a. a long story
- b. a story about a tall man
- c. a story told as if it were true
- d. a tale told over and over

____77. "A tornado headed for his cattle."
- a. came toward
- b. wanted the heads
- c. followed
- d. was ahead of

____78. "He was yanked up into the middle of the ugly green cloud."
- a. pushed upward
- b. jerked up quickly
- c. moved slowly
- d. floated up

____79. "He was mooning around like a love-sick puppy."
- a. dreamy
- b. excited
- c. lonesome
- d. studying the stars

____80. "She accepted before he could back out."
- a. go backwards
- b. decide it was a good idea
- c. change his mind
- d. go out the back way

____81. "The bray shattered the stillness."
- a. stopped the noise
- b. broke the silence
- c. made a soft sound
- d. added to the stillness

____82. "He was shedding crocodile tears."
- a. large tears
- b. crying like a crocodile
- c. the tears of a crocodile
- d. crying easily without being very sorry

____83. "I know a certain young fellow who's gettin' too big for his breeches."
- a. outgrowing his clothes
- b. smart and sassy
- c. too big to play with children
- d. his pants are too tight

____84. "He was fourteen, skinny, and badly spoiled."
- a. in bad health
- b. had a bad smell about him
- c. used to having his own way
- d. did what others told him to do

____85. "Skip it," said Jimmy briefly. "You wouldn't understand."
- a. forget it
- b. pretend it didn't happen
- c. jump over it
- d. wait till later

____86. "I think I'll call it a day."
a. I'll stop now
b. stop at the end of the day
c. call it today
d. name it "day"

____87. "Martha Daniels was the star diver of the club, and all eyes were on her as she stood ready at the edge of the platform."
a. all eyes were open
b. she was watching them
c. she was not seen by all
d. everyone watched her

____88. "She's coming around now," Bob announced after he had worked with her for a few minutes."
a. she's coming over now
b. she's waking up
c. coming with us
d. she's coming in a little while

____89. "They were carrying only a skeleton crew - a mechanic and a radioman.
a. the bones of the crew
b. a little crew
c. the necessary members of the crew
d. a crew's skeleton

____90. "Once more Bolivar must leave South America, now with a price put upon his head by Spain.
a. a number on his forehead
b. a reward for his capture
c. hishead was in demand
d. he was for sale

ANSWER SHEET

Name of Test IDIOMS TEST Form____ Score____ Percentile____

Your Name________ (Last) (First) (Middle) Sex____ (M or F)

Language Spoken at Home________ Group____

Date of Birth________ Age____ (Years) (Months) Grade____

School________ City________

Teacher________ Date of Testing________

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(1) a b c d	(19) a b c d	(37) a b c d	(55) a b c d	(73) a b c d
(2) a b c d	(20) a b c d	(38) a b c d	(56) a b c d	(74) a b c d
(3) a b c d	(21) a b c d	(39) a b c d	(57) a b c d	(75) a b c d
(4) a b c d	(22) a b c d	(40) a b c d	(58) a b c d	(76) a b c d
(5) a b c d	(23) a b c d	(41) a b c d	(59) a b c d	(77) a b c d
(6) a b c d	(24) a b c d	(42) a b c d	(60) a b c d	(78) a b c d
(7) a b c d	(25) a b c d	(43) a b c d	(61) a b c d	(79) a b c d
(8) a b c d	(26) a b c d	(44) a b c d	(62) a b c d	(80) a b c d
(9) a b c d	(27) a b c d	(45) a b c d	(63) a b c d	(81) a b c d
10) a b c d	(28) a b c d	(46) a b c d	(64) a b c d	(82) a b c d
11) a b c d	(29) a b c d	(47) a b c d	(65) a b c d	(83) a b c d
12) a b c d	(30) a b c d	(48) a b c d	(66) a b c d	(84) a b c d
13) a b c d	(31) a b c d	(49) a b c d	(67) a b c d	(85) a b c d
14) a b c d	(32) a b c d	(50) a b c d	(68) a b c d	(86) a b c d
15) a b c d	(33) a b c d	(51) a b c d	(69) a b c d	(87) a b c d
16) a b c d	(34) a b c d	(52) a b c d	(70) a b c d	(88) a b c d
17) a b c d	(35) a b c d	(53) a b c d	(71) a b c d	(89) a b c d
18) a b c d	(36) a b c d	(54) a b c d	(72) a b c d	(90) a b c d

MULTIPLE MEANINGS
FORM I

YOUR NAME______________________ GRADE______ SEX________ GROUP________
(M or F)

SCHOOL________________ CITY________________ TEACHER________________

DATE OF BIRTH____________ LANGUAGE SPOKEN AT HOME____________ TODAY'S DATE __________

In this test you are to put an X over the letter of the sentence in which the underlined word is not used correctly. There is only one incorrect sentence in each problem. (TEACHER: Please go over the directions and examples with the children. There is no time limit.)

EXAMPLE: a. Read the next line of the story.
b. Line the box with paper.
c. Throw your line into the water and catch a fish.
[✓ d.] The line is in the cage.

EXAMPLE: a. We don't like him.
b. The like sank when we got in.
c. We saw lions, tigers, and the like at the zoo.
d. Do it like a man.

EXAMPLE: a. His face was dirty.
b. Does your house face the mountains?
c. He face the telephone.
d. There are no Martians on the face of the earth.

1. a. It was light as day.
b. Feathers are light.
c. A light is good to eat.
d. We need more light on this subject.

2. a. Place the book on the table.
b. Save my place in line.
c. John won first place.
d. There was place on the dress.

3. a. He hit the ball with a bat.
b. We hit the right road in the dark.
c. There was a hit in the jar.
d. The new play is the hit of the year.

4. a. Did you see the bank of snow?
b. We put our money in the bank.
c. Bank him for the gift.
d. They saw the plane bank.

5. a. We went down the all.
b. All dogs have ears.
c. They came after all.
d. No one at all came to the party.

6. a. He hit the ball straight.
   b. He ate a straight apple.
   c. He was a straight thinker.
   d. They set the room straight.

7. a. Strike at the ball.
   b. The workers were on strike.
   c. A strike is good to eat.
   d. Don't strike a match.

8. a. The plain wore off his new coat.
   b. It came in a plain package.
   c. The answer is plain to everyone.
   d. The house was built on a high plain.

9. a. The book is mine.
   b. He found a gold mine.
   c. The ship hit an underwater mine.
   d. I can't mine the children now.

10. a. Let me range the desk for you.
    b. What is your hearing range?
    c. The cowboy rode the range.
    d. Mother got a new electric range.

11. a. Don't lean on the tree.
    b. He likes lean meat.
    c. Buy me a lean shirt.
    d. He was a tall, lean man.

12. a. He bit into the meat.
    b. The bit ran around the room.
    c. There wasn't a bit left.
    d. He put the bit in the horse's mouth.

13. a. Do you dull the dog?
    b. The point of the sword was dull.
    c. It was a dull party.
    d. He is a dull boy.

14. a. He put the short on the bread.
    b. He was a short man.
    c. We stopped short when we saw the bear.
    d. He was short some of the money.

15. a. He smokes a pipe.
    b. The water pipe broke.
    c. The pipe will eat soon.
    d. He plays a pipe organ.

(20

Form I

16. a. She blew out the match.
    b. His socks don't match.
    c. He put the food in a match.
    d. We saw a boxing match.

17. a. The men walked single file.
    b. We put the papers in the file.
    c. You can make it smooth with a file.
    d. The file sailed away.

18. a. There are three vacant lots on the street.
    b. He has lots of marbles.
    c. We lots him in the woods.
    d. We drew lots to see who would go.

19. a. He got red and flash.
    b. It all happened in a flash.
    c. He will flash us a signal.
    d. We saw a flash of lightning.

20. a. The boy ran to his father and said, "Hello, Pop."
    b. The pop of it was painted red.
    c. The man said he would "pop" him on the nose.
    d. We heard the balloon pop.

21. a. He sawed the board.
    b. His board was looking at us.
    c. He got on board the train.
    d. The school board met today.

22. a. March is the third month.
    b. The soldiers made a long march.
    c. The march was heating on the stone.
    d. The band played a fast march.

23. a. He fell off of the trade.
    b. Let's trade marbles.
    c. He learned a new trade.
    d. What do you know about the trade winds?

24. a. He has a part in the play.
    b. Let's part friends.
    c. He ate part of the apple.
    d. He was part when he saw us coming.

25. a. Don't bend the branch.
    b. The boat went around a bend in the river.
    c. The bend hurt his head.
    d. He did a deep-knee bend.

Form I

26. a. He ran to first base.
    b. He worked at the Army base.
    c. He found some base in the ground.
    d. The building rested on a base of rock.

27. a. Did you have bat in us.
    b. It's my turn to bat.
    c. The bat flew out of the cave.
    d. The bat was broken.

28. a. Let's take a short cut.
    b. Don't cut your finger.
    c. The cold wind cut him to the bone.
    d. The apple cut the knife.

29. a. Please fill the cup.
    b. He ate his fill.
    c. He fill and hurt himself.
    d. You need more fill dirt for the yard.

30. a. He went down the slide.
    b. He ran and slide from us.
    c. Turn out the light so I can show the slide.
    d. He let his work slide until it was too much to do.

MULTIPLE MEANINGS
FORM II

YOUR NAME______________________ GRADE_______ SEX_______ GROUP________
(M or F)

SCHOOL_______________ CITY_____________ TEACHER____________________

DATE OF BIRTH______________ LANGUAGE SPOKEN AT HOME__________ TODAY'S DATE__________

In this test you are to put an X over the letter of the sentence in which the underlined word is not used correctly. There is only one incorrect sentence in each problem. (TEACHER: Please go over the directions and examples with the children. There is no time limit.)

EXAMPLE:
a. Read the next line of the story.
b. Line the box with paper.
c. Throw your line into the water and catch a fish.
X d. The line is in the cage.

EXAMPLE:
a. We don't like him.
b. The like sank when we got in.
c. We saw lions, tigers, and the like at the zoo.
d. Do it like a man.

EXAMPLE:
a. His face was dirty.
b. Does your house face the mountains?
c. He face the telephone.
d. There are no Martians on the face of the earth.

1.
a. The trunk of the tree is large.
b. I put my clothes in a trunk.
c. The elephant's trunk is long.
d. We have a trunk to the ball game.

2.
a. Check grows on a tree.
b. Father will write a check for the man.
c. Check the paper carefully.
d. There was a small check in the pattern of the dress.

3.
a. This is good land for a garden.
b. The pilot will land the airplane.
c. The thief will land in jail.
d. We went to the land concert.

4.
a. Mary will take your hand.
b. We will bake a take.
c. I take cold easily.
d. Let us take a walk.

5.
a. Please give me change for this quarter.
b. Did you have a change to go?
c. Do not change your mind.
d. John will change his clothes to go to the party.

Form II

6. a. He can shoot the gun.
   b. The buds will shoot up soon.
   c. Let me shoot your picture.
   d. He read the shoot well.

7. a. He hurt my left hand.
   b. There is nothing left.
   c. We put left in the pan.
   d. We left the city.

8. a. Pitch the ball.
   b. We tried to pitch dinner for you.
   c. That was a good pitch.
   d. Help me pitch the tent.

9. a. Don't hold me.
   b. Look in the hold of the ship.
   c. The cup can hold water.
   d. Your clothes are full of hold.

10. a. The sky is grade today.
    b. The car went up a steep grade.
    c. I will grade your paper now.
    d. What grade are you in?

11. a. We heard the bar run past.
    b. He had a drink in the bar.
    c. He ate a bar of candy.
    d. Don't bar the door.

12. a. We went to the fair.
    b. He wasn't a fair judge.
    c. Her skin was very fair.
    d. I fair him when I see him.

13. a. We ate a square for lunch.
    b. He drew a square on the paper.
    c. The girl thought he was a "square shooter."
    d. The speech was made in the public square.

14. a. You may put the shade up now.
    b. Don't shade up when we go.
    c. We sat in the shade and waited.
    d. That is a nice shade of red.

15. a. Two lemonade stands were on the street.
    b. He stands when a woman enters the room.
    c. He sat in the stands to watch the game.
    d. He wore the stands to work.

16. a. The suit didn't fit him.
b. Mother had a fit when she saw her dirty boy.
c. The fit broke and spilled.
d. He isn't fit for the job.

17. a. Can you case it with you?
b. Go buy a case of dog food.
c. She had a case of measles.
d. Tell me in case it rains.

18. a. His heart is beating.
b. We heart her calling.
c. He learned it by heart.
d. He went to the heart of the matter.

19. a. She wore a long slip.
b. Don't slip in the mud.
c. I slip him yesterday.
d. He gave me a slip of paper.

20. a. The judge entered the court.
b. The policeman court him in the act.
c. We were at the tennis court.
d. The ladies of the king's court were beautiful.

21. a. Can I top you to the party?
b. We went to the top of the mountain.
c. I will spin the top.
d. The runners ran off at top speed.

22. a. He got a sun tan during the summer.
b. He wore a tan suit.
c. The tan comes in at nine o'clock.
d. If you tan the hide it becomes leather.

23. a. He ran up the steps.
b. He took steps to stop the noise.
c. The dancer knows some fancy steps.
d. The steps were speaking fast.

24. a. Can you spell this word?
b. You have to spell the pencil first.
c. He worked a long spell.
d. The princess was put under a spell.

25. a. We have a pass to the baseball game.
b. The cowboys rode through the pass.
c. Don't be so pass about it.
d. I saw him pass the house.

Form II

26. a. Will you hold the boy's hand?
    b. We walked down the hand.
    c. Hand the pencil to me.
    d. He had no hand in the matter.

27. a. The thief is lying to us.
    b. He played the lying well.
    c. It is lying on the table.
    d. We won't take this lying down.

28. a. We have a chance to win.
    b. By chance are you going?
    c. We will chance it if the sun is shining.
    d. The chance stayed in the icebox.

29. a. A blow shoe fell on the floor.
    b. He hit the man a blow on the head.
    c. The wind will blow hard tonight.
    d. Losing the game was a hard blow to the team.

30. a. We drove the duck of cattle.
    b. We will have duck for lunch.
    c. Do not duck anyone in the water.
    d. Duck when you see the ball coming at you.

ANALOGIES TEST-FORM I

YOUR NAME ______________________ GRADE __________ SEX ______ GROUP ______
(M OR F)
SCHOOL __________________________ CITY ____________ TEACHER __________
DATE OF BIRTH _____________ LANGUAGE SPOKEN AT HOME ___________________
TODAY'S DATE ______________________

Each sentence on this page, if completed correctly, states an analogy; that is, a likeness in some respect between things that are otherwise unlike. Draw a ring around the word following each sentence that correctly completes the analogy.

EXAMPLE: Cold is to ice as hot is to..........fire burn careful
EXAMPLE: Glove is to hand as hat is to........top head wear
EXAMPLE: Robin is to bird as Ford is to.......travel automobile sedan

1. Brave is to knight as sharp is to................deed sword armor

2. Chair is to sit as floor is to....................stand carpet sleep

3. Large is to giant as small is to..................letter man dwarf

4. Saying is to speaking as fighting is to...........sinking boxing running

5. Wrist is to bracelet as finger is to..............nail thumb ring

6. Food is to eat as water is to.....................bath thirsty drink

7. Car is to ground as ship is to....................sail water travel

8. Hat is to head as shoe is to......................toes foot leather

9. Jewel is to ruby as weapon is to..................steel hunting rifle

10. Sweet is to sugar as bright is to................cloudy red sunshine

11. Lace is to shoe as button is to..................campaign fastening coat

12. Lion is to wild as dog is to.....................growl tame bark

13. Table is to eat as bed is to.....................sleep soft floor

14. Ground is to brown as sky is to..................bird blue sun

15. Foot is to horse as wheel is to..................car round tire

16. Spider is to web as beaver is to.................coat busy dam

17. Trout is to fish as oatmeal is to................apple cereal breakfast

18. Deer is to doe as sheep is to....... ....ewe shepherd bleat

19. Toes are to feet as fingers are to...............hold hands glove

Form I

20. Bread is to butter as soup is to .... crackers hot eat
21. Night is to stars as day is to .... moon sun night
22. Chalk is to board as pencil is to .... write sharp paper
23 . Book is to library as money is to .... spend buy bank
24. Apple is to tree as berry is to .... eat bush flower
25. Arm is to hand as leg is to .... toes foot pants
26. Play is to child as work is to .... man school tree
27. Red is to blue as apple is to .... peach green tree
28. Leather is to shoes as wool is to .... sweater sheep socks
29. Black is to white as day is to ....sun moon night
30. Wings are to bird as fins are to .... fish water swim
31. Fat is to thin as clean is to .... water dirty face
32. Bow is to arrow as gun is to .... bullet target holster
33. Bear is to bare as deer is to .... animal dear shoot
34. Train is to track as car is to .... run motor road
35. Close is to near as beautiful is to .... flower girl pretty

ANALOGIES TEST
FORM II

YOUR NAME ______________________ GRADE ____________ SEX ____ GROUP ______

SCHOOL ____________________ CITY ________________ TEACHER ________________

DATE OF BIRTH ____________________ LANGUAGE SPOKEN AT HOME ______________

TODAY'S DATE ____________________

Each sentence on this page, if completed correctly, states an analogy; that is, a likeness in some respect between things that are otherwise unlike. Draw a ring around the word following each sentence that correctly completes the analogy.

EXAMPLE: Cold is to ice as hot is to........fire burn careful
EXAMPLE: Glove is to hand as hat is to......top head wear
EXAMPLE: Robin is to bird as Ford is to.....travel automobile sedan

1. Cup is to dishes as chair is to...................high soft furniture
2. Light is to dark as awake is to...................pretend asleep prince
3. Bull is to horn as camel is to....................water hump desert
4. Rug is to floor as pavement is to.................drive hard street
5. Old is to young as parent is to...................sister child father
6. Water is to drink as bread is to..................eat bake butter
7. Hate is to love as pain is to.....................pleasure honesty fake
8. Man is to shoe as goat is to......................milk walk hoof
9. Ink is to pen as lead is to.......................heavy pencil metal
10. Terrible is to awful as quiet is to..............church sleep silent
11. Football is to kick as baseball is to............hit pass sport
12. Eye is to see as ear is to.......................noise hear loud
13. Flower is to rose as animal is to ....pet wolf wild
14. Clock is to minute as ruler is to................king yardstick inch
15. Happy is to smile as sad is to...................hurt frown unhappy
16. Mountain is to high as valley is to..............deep warm green
17. Fruit is to apple as meat is to..................ham butter cook
18. Peal is to peel as bald is to....................hair scald bawled
19. Cowboy is to horse as pilot is to................fly plane air

Form II

20. Bird is to robin as grain is to.................field eat wheat

21. Fast is to slow as sweet is to..................candy pickles sour

22. Water is to glass as coffee is to..............hot cup black

23. Tree is to trunk as flower is to................smell stem pretty

24. Run is to crawl as speed is to..................swift slow car

25. Lovely is to pretty as precious is to ....greedy dear stones

26. Coach is to team as teacher is to..............book class play

27. Milk is to cow as egg is to......................ham Easter hen

28. Heat is to cold as champion is to..............ball loser game

29. Baby is to little as man is to..................father big strong

30. Pants are to legs as shirt is to................wear arms clean

31. Book is to read as movie is to..................T.V. write see

32. Pretty is to ugly as fast is to.................slow walk swift

33. Worm is to bird as nut is to....................candy squirrel cracker

34. Wash is to clothes as sweep is to..............floor water broom

35. Day is to month as minute is to.................clock hour second

ANTONYMS

YOUR NAME________________________ GRADE____________ SEX________ SCORE________

SCHOOL______________________ CITY_______________ TEACHER________________

DATE OF BIRTH____________________ TODAY'S DATE_____________________________

LANGUAGE SPOKEN AT HOME___________________________ GROUP___________________

DIRECTIONS:

Read the sample sentence below carefully. Complete the sample by writing in the word which is opposite in meaning to the word underlined in the sentence. Continue in the same way with the test sentences. Do your best to spell the words correctly, but do not leave out a sentence because you do not know how to spell the word. Do the best you can, and go on to the next sentence.

EXAMPLE: Again and again, he tried to make his yo-yo go up and ____________.

1. Have someone hold the bottom of a ladder. Then you can climb to the _______ safely.
2. To keep well, drink six glasses of water a day, and _________ good food.
3. The woman sang the high notes, as the man sang the __________ ones.
4. A rabbit's ears are long. His tail is very _________________.
5. An elephant is a large animal. A mouse is _________________.
6. Take the baby to the doctor. He will ____________ him a shot.
7. Goldilocks went to sleep on Little Bear's soft bed. Father Bear's bed was too ______________.
8. The circus will move to another city after this show. The children wish it would ______________ here.
9. The chickens began to come from under the old hen, after the rain _________.

10. The tramp stood outside looking at the warm, cozy room. He wished he could be ________________, too.

11. Bill enjoyed his trip to the country. His home was in a large________.

12. We stand to salute the flag. When we are through, we _________down.

13. How little the baby's hand looked in her daddy's ___________ one.

14. A doll would be a good toy for a girl. I would buy a football for a ___________.

15. All drivers should know that the red light means stop, and the green light means_______________.

16. John was the first boy to come to the party. Then he was the ________ one to leave.

17. Little Jack Horner put in his thumb, and pulled ___________ a plum.

18. Mother put her cool hand on the child's ____________ forehead.

19. The man worked at night. He had to sleep during the _____________.

20. When we give the play, it will be hard to make these young children look ____________.

TEST II

MATCHING OF OPPOSITES

Directions for Part I and Part II : Draw a line from the word in the left hand column to its opposite in the right hand column.

PART I

1. wide
2. push
3. beautiful
4. friend
5. huge
6. loud
7. glad
8. new
9. light
10. hands

1. ugly
2. sorry
3. pull
4. large
5. old
6. pretty
7. feet
8. narrow
9. tiny
10. soft
11. dark
12. enemy

****

PART II

11. found
12. play
13. buy
14. on
15. husband
16. graceful
17. tall
18. thick
19. generous
20. courteous

13. off
14. dancer
15. short
16. lost
17. rude
18. children
19. thin
20. stingy
21. work
22. awkward
23. wife
24. sell

PART III, RECOGNITION OF OPPOSITES

DIRECTIONS:

This test is like other multiple choice tests you have taken. Put a circle around the word you think is opposite in meaning to the first word in each group of words.

EXAMPLE:

easy	every	fun	hard

1.	there	place	open	here
2.	white	clear	sheet	black
3.	spring	fall	season	flowers
4.	right	correct	left	hand
5.	open	eyes	turn	shut
6.	good	nice	bad	grades
7.	scared	frightened	feeling	brave
8.	kind	mean	good	woman
9.	light	shine	day	heavy
10.	caught	fish	threw	first
11.	front	first	door	back
12.	quick	quiet	fast	slow
13.	laughed	funny	cried	large
14.	always	anyway	never	forever
15.	wake	sleep	dressed	breakfast
16.	short	bark	long	low
17.	cold	cool	hot	winter
18.	near	close	far	never
19.	early	late	morning	winner
20.	weak	sick	strong	month

APPENDIX C

THE CULTURALLY BIASED SCIENCE TEST

Carol Charles

SCIENCE -- CULTURALLY BIASED

5th Grade

Your name ______________________ School ______________

Date ______________ Teacher ______________________

1. When the porcupine becomes angry he
    - a. tries to bite
    - b. throws his quills through the air
    - c. uses his claws to scratch
    - d. strikes with his tail
2. If food is left for one day in an open tin can in a refrigerator
    - a. it will mold
    - b. it will become poisonous
    - c. it will keep fresh
    - d. it will sour
3. When stream water runs over 200 feet of gravel
    - a. it is safe to drink
    - b. it may not be safe to drink
    - c. it will become muddy
    - d. it will dry up
4. Warts on the hands are caused by
    - a. witches
    - b. eagles
    - c. frogs
    - d. none of these
5. When sleeping at night we should
    - a. keep out the night air
    - b. keep out the witches
    - c. have fresh air
    - d. keep the room hot

6. We can sometimes see the eyes of animals at night because
   - a. they shine
   - b. they are witches
   - c. they reflect other light
   - d. they are mean

7. If we split a crow's tongue
   - a. it will be healthier
   - b. it will talk better
   - c. it will not talk better
   - d. it will become tame

8. Dragonflies
   - a. take care of snakes
   - b. are witches' darning needles
   - c. eat smaller insects
   - d. kill frogs

9. If a rattlesnake has eight rattles we know that
   - a. it has bitten eight people
   - b. it has eight children
   - c. it has shed its skin eight times
   - d. it is eight years old

10. If we kill a snake
   - a. it crawls until sundown
   - b. we will get sick
   - c. its mate will come for it
   - d. none of these will happen

11. The most unlucky day is
    - a. When somebody dies
    - b. Valentine's Day
    - c. Friday the 13th
    - d. None of these is unlucky

12. One thing that is sure to make you lucky is
    - a. an eagle feather
    - b. a rabbit's foot
    - c. spilled salt
    - d. none of these

13. If a turtle bites you
    - a. you will get very sick
    - b. he will not turn loose until it thunders
    - c. both of these
    - d. neither of these

14. There are witches and ghosts
    - a. only at Hallowe'en
    - b. all the time
    - c. never
    - d. only at night

15. A bird that can make it rain is
    - a. the eagle
    - b. the owl
    - c. the mourning dove
    - d. none of these

16. If squirrels gather many nuts
    - a. they are hungry
    - b. it will be a short winter
    - c. it will be a long winter
    - d. none of these

17. For us to grow bigger, our meals should always have lots of
    - a. salt
    - b. chicken
    - c. fish
    - d. vitamins

18. Rain is caused
    - a. by condensation of water vapor
    - b. by smoke clouds
    - c. by rain dances
    - d. by wind

19. Blindness is often caused
    - a. by rabbits
    - b. by owls
    - c. by injuries
    - d. by none of these

20. It is bad luck if your path is crossed by
    - a. a coyote
    - b. a black cat
    - c. a cow
    - d. none of these

21. The sun is

a. a man person

b. a star

c. a comet

d. a planet

22. Disease or sickness may be caused

a. by germs

b. by witches

c. by getting your feet wet

d. by all of these

23. Bad dreams often happen when you

a. sleep on feathers

b. eat too much just before bed-time

c. sleep on your back

d. sleep on your stomach

24. The most important number is

a. three

b. seven

c. four

d. none is more important than another

25. We have day and night because

a. the sun gets up in the morning and goes to bed at night

b. the earth goes around the sun

c. the earth turns on its axis

d. the sun goes around the earth

26. Stars are

    a. angels in the sky

    b. spirits in the sky

    c. suns

    d. planets

27. We should not drink water from ponds because

    a. it might contain disease germs

    b. it will make your eyes big like a frog's

    c. it might have mosquitoes in it

    d. it might have moss in it

28. The moon is

    a. a woman planet

    b. a man planet

    c. a star

    d. a satellite

29. Clouds are

    a. the homes of angels

    b. condensed water vapor

    c. ghosts

    d. smoke

30. We have summer and winter because

    a. the earth's axis tilts

    b. we are closer to the sun in summer

    c. snow makes winter cold

    d. we turn the sun back to make winter and summer

31. You should not eat

    a. beans

    b. ducks

    c. apples

    d. toadstools

32. The best time to plant corn is

    a. when the blackbirds return

    b. when the moon is right

    c. when the cottonwood leaves are as big as squirrels' ears

    d. when season, moisture, temperature, and soil are right

33. Some birds eat mice. That is the way they help people. One of these birds is

    a. the owl

    b. the sparrow

    c. the bluebird

    d. the redbird

34. One animal that helps many people is

    a. the mouse

    b. the bear

    c. the goat

    d. the porcupine

35. The lining of a coat is the inside part. If it were very cold, we would want a coat with

    a. a lining of paper

    b. a lining of feathers

    c. a lining of leaves

    d. no lining at all

36. An animl that can make it rain is

a. the pig

b. the cow

c. the frog

d. none of these

37. The earth is

a. a woman person

b. a man person

c. a round object

d. a flat object

38. Lightning is

a. electricity

b. a bad spirit

c. a good spirit

d. a witch

39. If you are sick you should go first to

a. a medicine man

b. the lawyer

c. the doctor

d. the church

40. Where lightning strikes once, it

a. will soon strike again

b. will never strike again

c. may or may not strike ag[illegible]

d. will send its sister

41. If you eat fish, which will happen?

    a. Your eyes will turn white.

    b. You will get sick all over.

    c. It will help you to be healthy.

    d. None of these.

42. If you eat chicken, which will happen?

    a. You will die

    b. You will get sick.

    c. You will be a witch.

    d. None of these will happen.

43. If a rattlesnake is about to bite you, you should

    a. kill it

    b. move it with a stick

    c. let it bite you

    d. tell it to go away

44. At night there is danger from

    a. dragons

    b. witches

    c. moon sickness

    d. none of these

45. When you break your arm it is always because

    a. you are careless

    b. you think bad thoughts

    c. too much pressure is put on the bone

    d. none of these

46. Witches can be

a. only men

b. only women

c. anyone

d. There are no witches.

47. A ring around the moon

a. is caused by moisture in the air

b. is the moon's house

c. is a mirage

d. is none of these

48. Rain comes

a. from lightning

b. from spirits that live in the clouds

c. from rainbows

d. from clouds

49. If you wake up in the morning and find clothes down off the line, it might be because

a. birds took them in the night

b. there was a strong wind in the night

c. the wolf man got them

d. the fairy got them

50. When we find pottery made by people long, long ago we should

a. break it

b. leave it alone

c. take it to school

d. burn it